Feb. 5, 1957 H. N. HARRISON 2,780,473

FARM WAGON HAVING AN EXTENSIBLE FRAME

Filed Nov. 5, 1954 2 Sheets-Sheet 1

Fig. 1

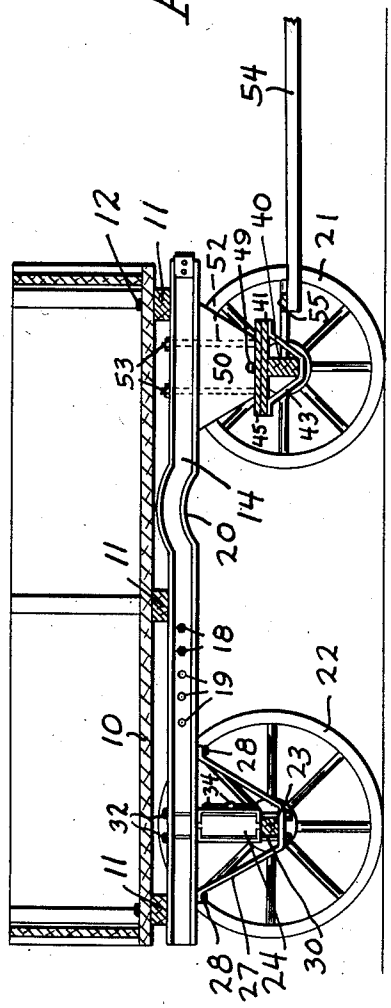
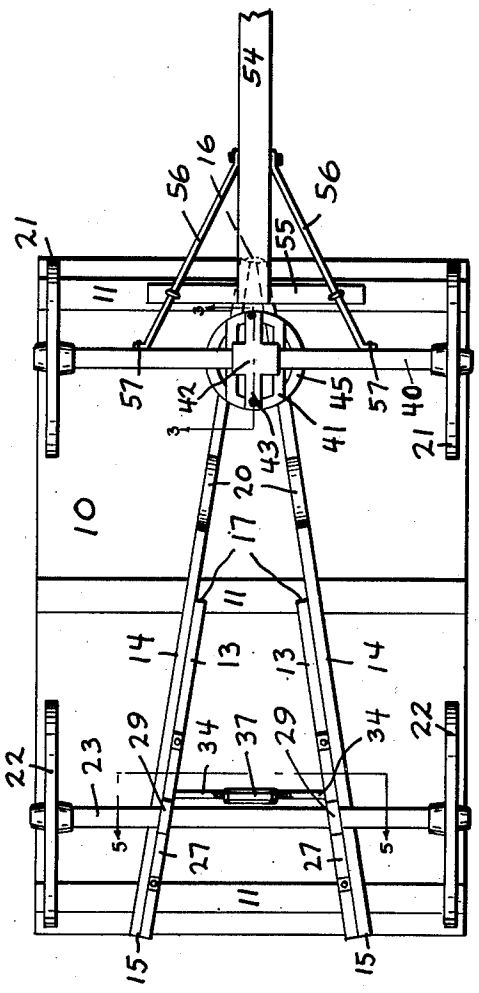


Fig. 2



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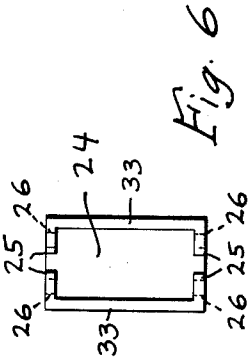


Fig. 6

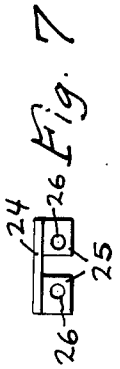


Fig. 7

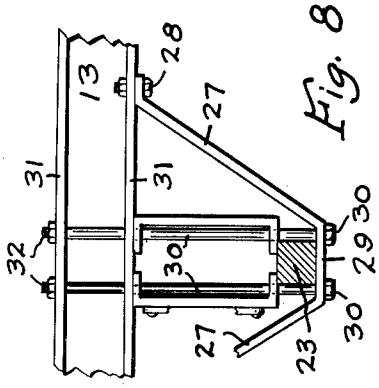


Fig. 8

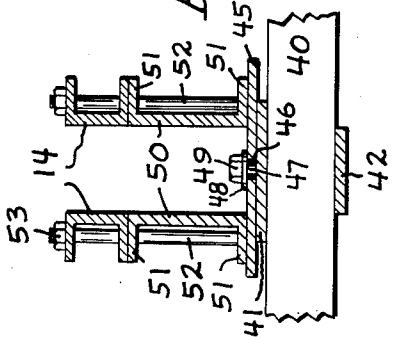


Fig. 4

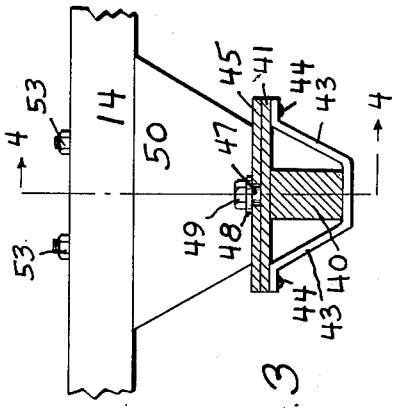


Fig. 3

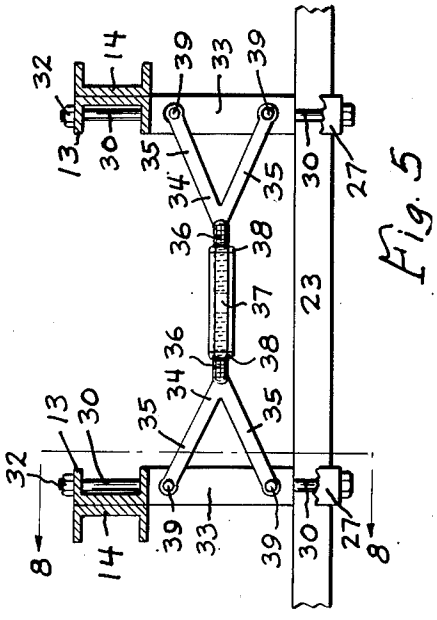


Fig. 5

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FARM WAGON HAVING AN EXTENSIBLE FRAME

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Application November 5, 1954, Serial No. 467,084

4 Claims. (Cl. 280—34)

My invention relates to a farm wagon structure.

An object of my invention is to provide a general utility farm wagon which can be converted from a grain or other wagon into a hay rack or similar structure.

A further object of my invention is to provide a farm wagon of this nature which includes a pair of principal stringers supported by axles and so connected to the same in a manner that will allow said stringers to be pulled outwardly to allow accommodation of increased sizes of wagon boxes etc.

A further object of my invention is to provide a front axle mounting which gives a greater degree of flexibility to the wagon and which will, furthermore, allow the front wheels to be turned at the greatest possible angle.

A further object of my invention is to provide a wagon structure wherein the longitudinal bracing member between the forward and rearward axle supporting members can be eliminated.

A further object of my invention is to provide supporting structures of maximum strength and adjustable features which can be adjusted, still retaining features of strength to the unit.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal sectional view taken through the wagon,

Figure 2 is an inverted plan view of the wagon,

Figure 3 is a sectional detail taken generally along the lines 3—3 of Figure 2,

Figure 4 is an enlarged sectional view taken along the lines 4—4 of Figure 3.

Figure 5 is an enlarged detail taken along the lines 5—5 of Figure 2.

Figure 6 is a detail of one of the supporting block units.

Figure 7 is a plan view of the same, and

Figure 8 is a sectional view taken along the lines 8—8 of Figure 5.

I have used the character 10 to designate generally a wagon box of standard construction to which is attached the suitable cross pieces 11. The bolts 12 provide means for attaching the cross pieces on the box to the adjustable stringers 13 and 14. The stringers 13 are channels which are preferably faced inwardly and attached to the stringers 13 are the further stringers 14. The stringers 14 are also channels which face outwardly and extend from the point 15 interiorly to the junction point 16, the stringers 14 converging toward the front of the wagon angularly as shown in Figure 2. The stringers 13 are relatively short compared to the stringers 14 and terminate at the approximate point 17. The stringers 13 and 14 are bolted together by means of suitable bolts such as 18 and further openings 19 are provided so that the inner stringers 13 can be pulled outwardly and re-

bolted in the same manner to provide a lengthened complete structure to the stringer arrangement so that the same can be used for longer boxes and other structures.

The stringers 14 include an arcuate portion at 20 which arcuate portion is upwardly bent from the stringers and which arcuate portion is adapted to allow the forward wheels 21 to pass therethrough regardless of the amount of turning of the forward axle. The rear wheels are indicated by the character 22. The rear axle 23 is spaced from the inner stringers 13 and is attached solidly thereto through the spacer block member 24. The members 24 are formed of channel iron and include the inwardly bent tongues 25 which include opening 26 (see Figures 6 and 7).

A strap brace having the two sides 27 is secured at both sides at 28 to the stringers 13 and the strap members 27 continue from the lower portion 29 which passes beneath the axle 23. A pair of lengthened bolts 30 pass through the member 29 and thence through the openings 26 in the members 24 and continue upwardly and pass completely through the webs 31 of the member 13 and are secured by means of the nuts 32 at the top thereof. It will be seen from this structure that by loosening the nuts 32 the entire structure can be moved laterally along the axle 33 for necessary adjustments to accommodate any size of upper structure.

Attached between the end webs 33 of the members 24 is an adjustable structure comprising a pair of Y-shaped members 34 each of which includes the bracing arms 35 and the threaded portions 36, one of the portions 36 being threaded with a left-hand thread, and the other with a right-hand thread, and which threaded portions engage similar threads in a centrally arranged turnbuckle member 37, with a pair of lock nuts 38 adapted to firmly tighten and secure the arrangement. The members 35 are secured at 39 to the webs 33. By virtue of this construction, regardless of the divergence of the stringers 14, the above structure can be adjusted to accommodate the same by merely using the turnbuckle 37 and securing by means of the lock nuts, and also maintaining a rigid structure at all times. The forward axle 40 is clamped between the member 41 which is a portion of a circle and the brace strap 42 which strap 42 extends upwardly into the arms 43 which are attached at 44 to the member 41.

An upper circular plate 45 rests upon the lower plate 41 and includes an opening 46 through which is received the circular upwardly extending portion 47 which is an integral part, or which is attached to the plate 41. A washer 48 is received on top of the member 47 and a cap screw 49 secures the washer in place. This structure prevents too great a vertical movement of the plates 41 and 45 and yet allows a slight amount of rocking movement necessary. This arrangement is spaced from the stringers 14 by means of the substantially triangular members 50. The members 50 are cut from channel sections leaving the web 51 at the upper and lower portions thereof. Counter-sunk head bolts 52 are attached to the plate 45 and pass upwardly through the webs 51 and thence pass through the webs of the channels 14 and are secured by means of the nuts 53 so that the whole arrangement can be bolted together strongly. The usual tongue and cross bar is indicated by the characters 54 and 55 with the bracing structure at 56 which structure is attached to the axle at 57.

It will now be seen from the foregoing description that the front axle can be pivoted about the member 47 as a center and still retain maximum strength in any direction. It will also be seen that the arch 20 provides a passageway for the forward wheels regardless of the extent of pivoting action of the front axle and without

necessitating too high a structure. It will also be seen that by simply pulling out the channels 13 to any desired position that various lengths of boxes and the like can be accommodated and by loosening the bolts 32 the rear axle structure can be readily accommodated as well as the braces 34 and 35. Such a structure eliminates the necessity of stringers on hay racks which now have the same but which would not require the stringers since they are furnished in this construction.

It will also be seen from the foregoing structure, that the longitudinal braces which are usually required between the forward and rearward axles, are not required since the above described structure through its bracing functions eliminates the need for the same. This refers to the brace which would be attached between the supporting units which carry these axles. This feature also allows the wheels 21 to turn in a more complete manner as explained above, without striking against an obstructing beam or similar bracing.

Other advantages are that one man can make all the changes necessary instead of two or more men where the box must be lifted over the wheels since the present structure slides readily into position. Other advantages are apparent from the description.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. A farm wagon comprising a pair of forwardly converging outer stringers, inner stringers attached adjacently to said outer stringers, means for adjustably securing said stringers together to form combined greater length to said stringer, said outer stringer including upwardly bent arcuate portions for allowing passage of wagon wheels therethrough when pivoting the same, means attaching a rear axle to said inner stringer and spacing the same therefrom including a pair of block members, said block members being formed of channel iron, a pair of bracing straps secured beneath said axle and to said inner stringer, bolts received through said straps and passing through said block members and said inner stringer members.

2. A farm wagon comprising a pair of forwardly converging outer stringers, inner stringers attached adjacently to said outer stringers, means for adjustably securing said stringers together to form combined greater length to said stringer, said outer stringer including upwardly bent arcuate portions for allowing passage of wagon wheels therethrough when pivoting the same, means for attaching a rear axle to said inner stringer and spacing the same therefrom including a pair of block members, said block members being formed of channel iron, a pair of bracing straps secured beneath said axle and to said inner stringers, bolts received through said straps and passing through said block members and said inner stringer members, said block members being spaced apart, braces attached between said block members, means for adjusting the length of said braces.

3. A farm wagon comprising a pair of forwardly converging outer stringers, inner stringers attached adjacently to said outer stringers, means for adjustably securing said stringers together to form combined greater length to said stringer, said outer stringer including upwardly bent arcuate portions for allowing passage of wagon wheels therethrough when pivoting the same, means for attaching a rear axle to said inner stringer and spacing the same therefrom including a pair of block members, said block members being formed of channel iron, a pair of bracing straps secured beneath said axle and to said inner stringers, bolts received through said straps and passing through said block members and said inner stringer members, said block members being spaced apart, braces attached between said block members, means for adjusting the length of said braces, a forward axle structure comprising an upper plate spaced from said outer stringers and attached thereto, including a channeled spacer member attached to the stringers and to the plate, a lower plate attached to the forward axle, said lower plate having a centrally arranged projection, said upper plate receiving said projection, means attached above said projection to limit vertical movement between the said plates.

4. A farm wagon comprising a pair of forwardly converging outer stringers, inner stringers attached adjacently to said outer stringers, means for adjustably securing said stringers together to form combined greater length to said stringer, said outer stringer including upwardly bent arcuate portions for allowing passage of wagon wheels therethrough when pivoting the same, means for attaching a rear axle to said inner stringer and spacing the same therefrom including a pair of block members, said block members being formed of channel iron, a pair of bracing straps secured beneath said axle and to said inner stringers, bolts received through said straps and passing through said block members and said inner stringer members, said block members being spaced apart, braces attached between said block members, means for adjusting the length of said braces, said adjusting means including a pair of Y-shaped brace members, the extremities of said Y-shaped members being threaded with opposed threads, a turnbuckle engaging said threaded extremities.

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