

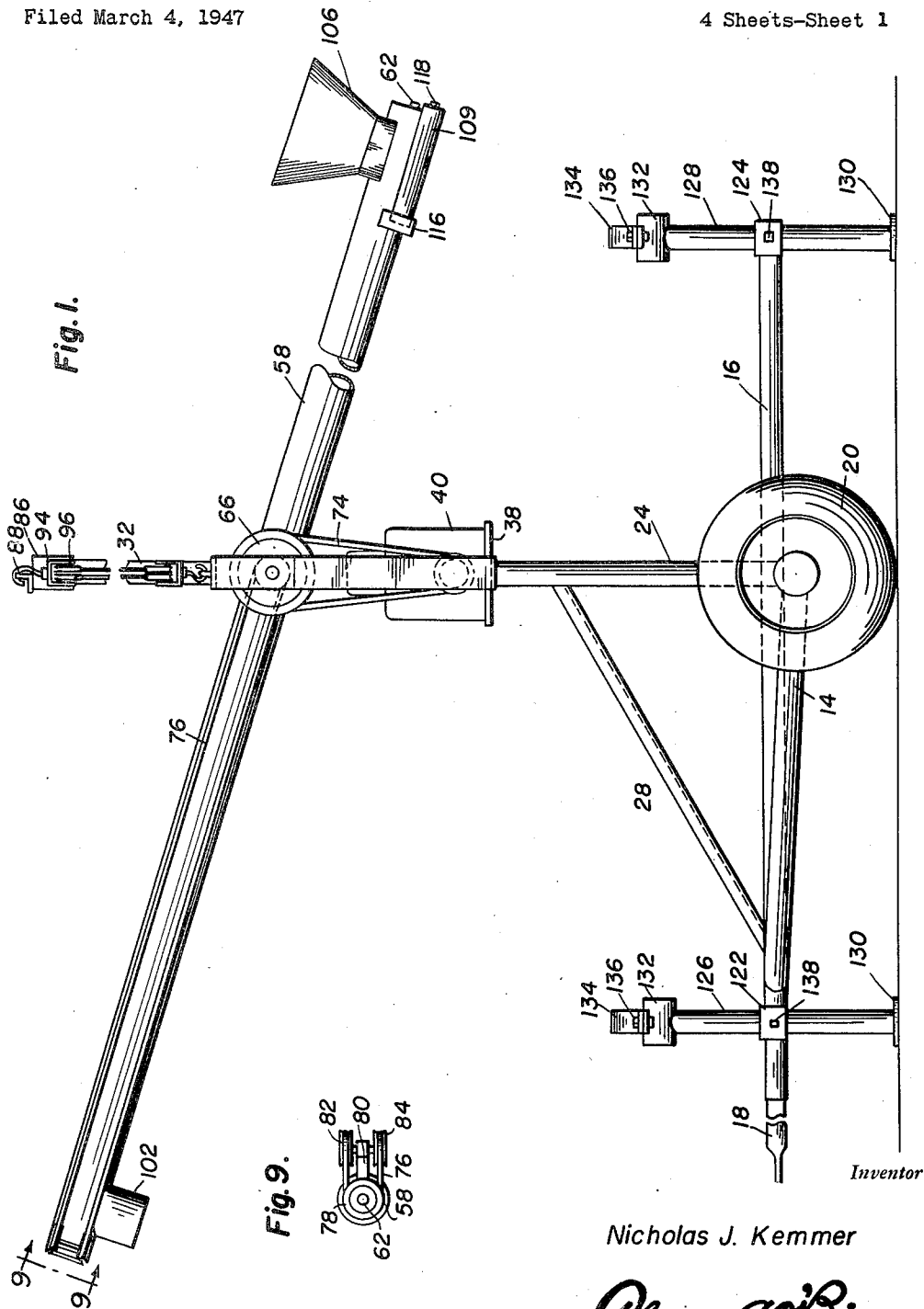
June 13, 1950

N. J. KEMMER
GRAIN LOADER

2,511,672

Filed March 4, 1947

4 Sheets-Sheet 1



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Fig. 2.

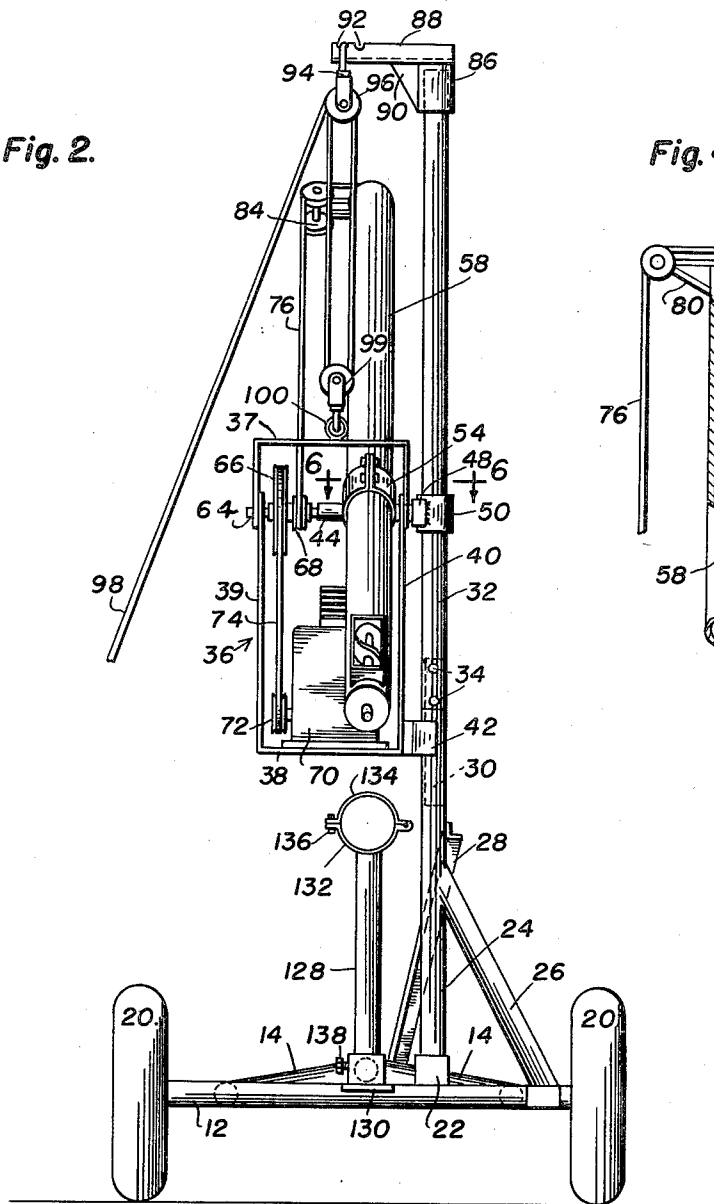
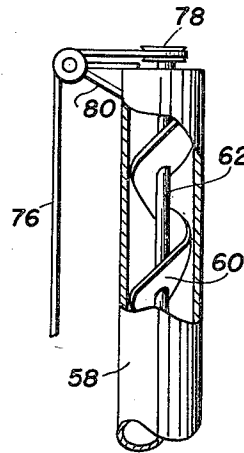


Fig. 4.



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Fig. 8.

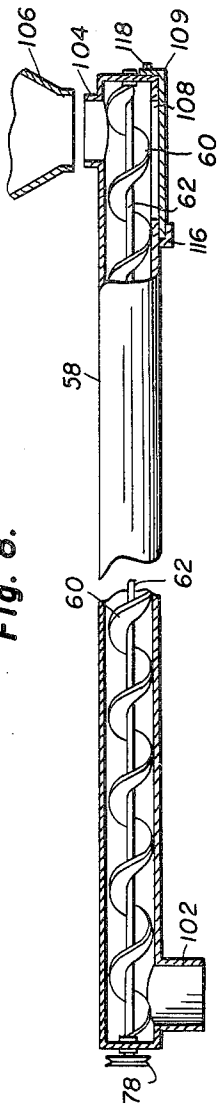
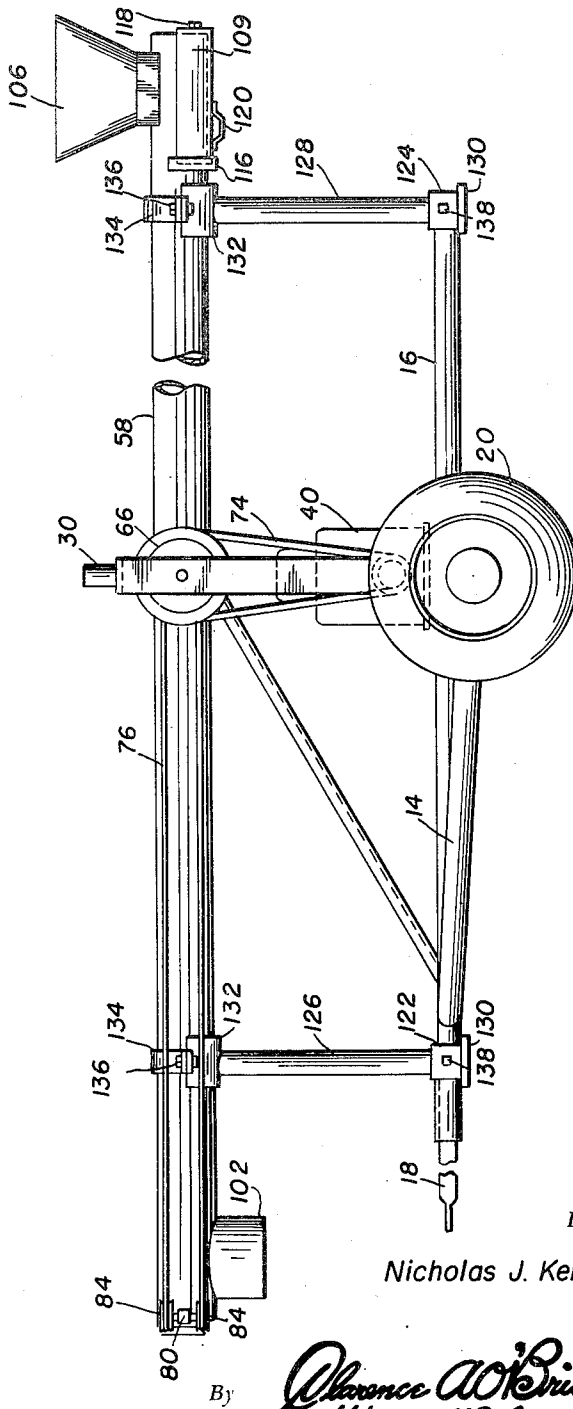


Fig. 3.



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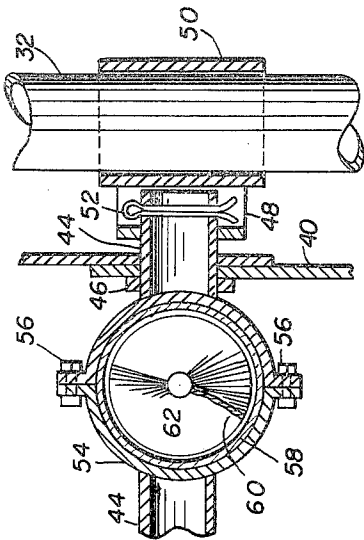


Fig. 7.

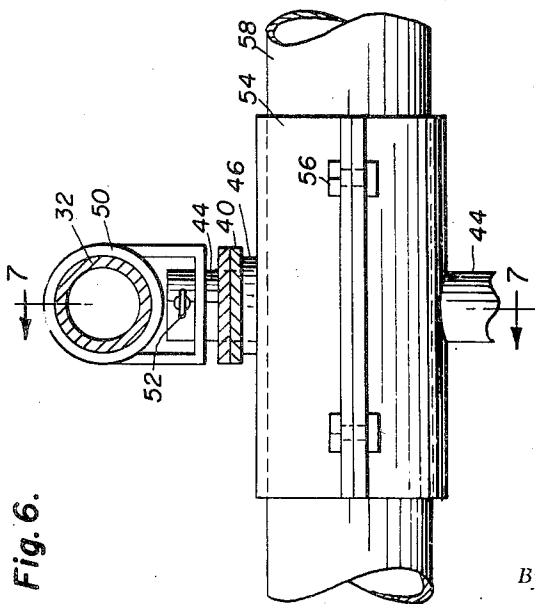


Fig. 6.

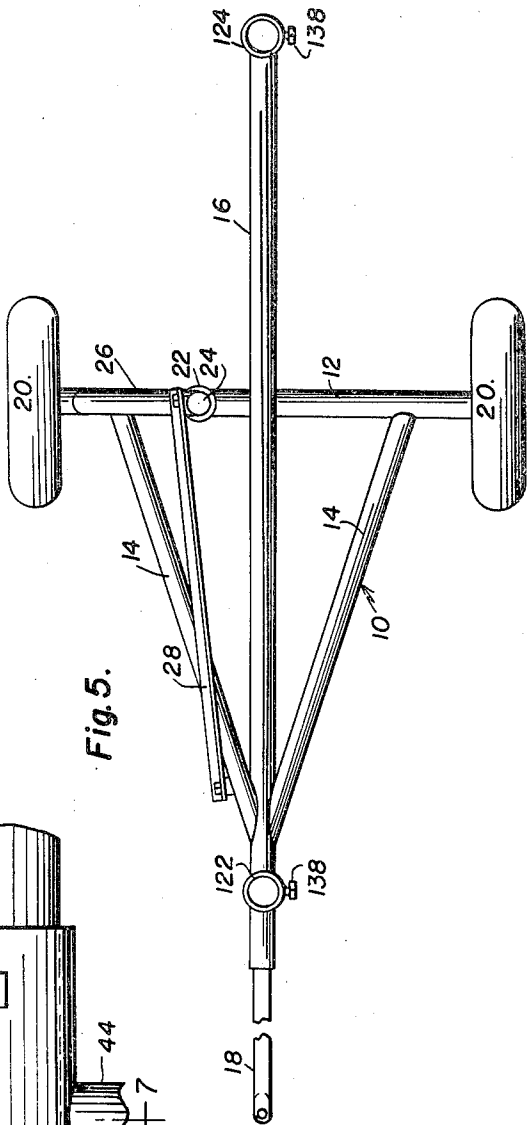


Fig. 5.

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UNITED STATES PATENT OFFICE

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GRAIN LOADER

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17 Claims. (Cl. 198—233)

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This invention appertains to novel and useful improvements in farm implements and particularly those adapted to be used in loading and conveying operations.

An object of this invention is to provide an improved conveying means for use particularly in conveying grain and the like.

Another object of this invention is to provide dismantlable support means on a wheeled chassis for pivotally receiving auger thereon.

Another object of this invention is to provide a carriage slidably and rotatably adjustable on said dismantlable means, for carrying the auger.

Another object of this invention is to provide power means in said carriage for rotating the screw of said auger.

A still further object of this invention is to provide means for adjusting and locking said carriage relative to said dismantlable means.

Another object of this invention is to provide common support means for holding the auger and the chassis in a predetermined fixed position.

Another object of the invention is to provide improved inlet means on said auger permitting selective use thereof.

Another object of this invention is to provide an extremely versatile device of the character described which is easy to transport and relatively simple in construction.

Ancillary objects and features of novelty will become apparent to those skilled in the art in following the description of the preferred embodiment of the present invention, illustrated in the accompanying drawings, wherein:

Figure 1 is an elevational side view of the preferred form of the present invention;

Figure 2 is an elevational end view of the invention disclosed in Figure 1, showing the common support means in a second, selected position;

Figure 3 is an elevational side view of the preferred form of the present invention, showing the same in position ready for transportation;

Figure 4 is an enlarged fragmentary detail of construction, partly in elevation and partly in section showing particularly the screw means and means for rotating the same;

Figure 5 is a plan view of the chassis used in conjunction with the present invention;

Figure 6 is an enlarged sectional detail of construction taken substantially on the line 6—6 of Figure 2 and in the direction of the arrows;

Figure 7 is an enlarged fragmentary detail of construction taken substantially on the line 7—7 of Figure 6 and in the direction of the arrows;

Figure 8 is a fragmentary, primarily sectional

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view of the auger forming part of the present invention, and;

Figure 9 is an end view of a detail of construction, taken substantially on the line 9—9 of Figure 1 and in the direction of the arrows.

Referring now in detail to the illustrated preferred embodiment of the present invention, like reference characters are used throughout to indicate similar elements.

This invention has been developed to provide a grain loading device which is extremely easy to manage and adjust and further, which provides a practically universal adjustment of the auger. Most devices of this nature are cumbersome and require at least two men to set up and adjust the same. The present invention provides a device which can be set up and operated by a single man and with very little difficulty.

A chassis 10 is composed of an axle housing 12 and a pair of radius rods 14 secured thereto. A boom 16 extends over said axle housing and provides an anchorage for the forward end of the said radius rod 14. A suitable draw bar connection 18 is secured to said boom and is adapted to be received on the towing portion of a conventional vehicle. A pair of conventional wheels 20 are rotatably disposed at the terminal portions of the said axle housing 12 thereby affording a convenient means for rolling or pulling the chassis wherever desired. It is noted at this point that the preferred securing means for all of the elements is welding, brasing or the like. A collar 22 is fixedly secured to the axle housing 12 and a tubular stand 24 is rigidly secured in said collar. A suitable bracing element 26 extends diagonally from the said stand 24, joining the axle housing 12. For further support, a tie rod 28 is provided between a shaft of the stand 24 and a selected radius rod 14. A reduced shank 30 extends from the said tubular stand 24 for the purpose of receiving an extension 32 removably thereon. Any suitable locking means may be provided between said reduced shank and extension 32 such as the removable pins 34 disclosed in Figure 2. These pins are an additional safety conducive device for the purpose of keeping the extension 32 fixed relative to the reduced shank 30.

Reference is now made to an important feature of the present invention, disclosed most advantageously in Figure 2. A carriage 36 is provided of some substantial material, preferably metal or the like, and is constructed having a top 37, a bottom 38 and but a single pair of side walls 39 and 40 respectively. A bracket 42 is secured to the said carriage 36 and terminates in a bifur-

cated sleeve which is slidably received on the stand 24 and the extension 32. On said carriage 36 and spaced from the guide 42, there is a sleeve 44 extending through the wall 40. A bearing block 46 may be provided interior of said wall and around said sleeve for the obvious purpose of providing additional strength. The sleeve 44 extends into a perch 48 and the said perch is fixedly secured to a collar 50. The collar 50 (see Fig. 7) is slidably received on the extension 32. It is apparent from the structure described herein that the said carriage 36 may be adjusted rotatably therearound. It is well to note at this point that the said sleeve 44 is provided with aligned apertures at the terminal portion thereof and a suitable pin 52 is inserted therethrough. This construction permits of rotation of said sleeve relative to the perch 48. A continuation of the said sleeve 44 is received within the carriage 36 and a split sleeve bearing 54 is interposed therebetween.

The said sleeve bearing 54 is secured together by some suitable conventional means, preferably by bolts 56. A tube 58 is slidably received in the said sleeve bearing 54 and may be locked in a selected position by proper manipulation of the said bolts 56. An auger 60, of the screw type is journaled within said tube 58, having portions of the usual shaft 62 extending beyond the confines of the tube. Since the sleeve bearing 54 is rigidly secured to the tube 44 and the said tube is rotatably received in the perch 48, described hereinbefore, it may be appreciated that the tubular member 58 may be pivotally adjusted relative to the perch and consequently the extension 32.

A shaft 64 is journaled in one terminal portion of the tube 44 and in a side wall 39 of the said carriage 36. A pair of sheaves 66 and 68 respectively are located on the said shaft 64. A power means 70, preferably a small internal combustion engine, is seated on the base 38 of the movable carriage 36. A power take-off, in the form of a drive shaft and sheave 72 extends from the engine housing. A suitable driving means, such as a V-grooved belt 74 extends around the sheaves 72 and 66. It is readily apparent that upon actuation of the larger sheave 66 the smaller sheave 68 will be rotated thereby driving a second belt means 76. Referring to Figure 1, it is seen that the said belt 76 extends parallel to the tube and auger means 58 and 60 respectively, said belt 76 being ultimately entrained about a sheave 78 on the terminal portion of the auger shaft 62. A bracket 80 is provided adjacent the said sheave 78 and a pair of auxiliary sheaves 82 and 84 respectively, are suitably journaled in said brackets. These last mentioned sheaves 82 and 84 are provided to offset the belt 76 and complete the circuit thereof. It may be appreciated now, that the power means 70 is received in the movable carriage 36 and is adjustable along with the auger. In usual constructions of this nature, the motor or power means is generally stationary and a long series of driving connections are required. The present invention tends to obviate this difficulty. Further, it is noted that the engine, usually an internal combustion engine, is placed conveniently for repair, adjustment and refueling. As mentioned hereinbefore, the said tube 58 may be slidably adjusted in the split bearing 54. The reason for this adjustment is now deemed quite apparent since slack may be taken up which might occur in the belt 76.

A collar 86 is swively journaled on the termi-

nal portion of the said extension 32 and a cantilever bracket 88 is secured thereon. A gusset plate 90 is provided between the cantilever and sleeve 86 for the usual strengthening purposes. A plurality of notches 92 are provided in the upper surface of said cantilever beam and are adapted to receive in selected position therein the pulley bracket 94. Double pulleys 96 are journaled within this bracket 94 and are adapted to receive the chain or rope 98 therearound. A complementary pulley 99 is secured to the upper wall 37 of the said carriage 36 and is also adapted to receive the rope 98 therein. Any suitable securing means may be utilized in connecting the said pulley 99 to the said carriage 36. The preferable construction is however, a simple eye bolt 100 which may be fixedly secured to said wall 37. It is quite apparent that the construction described herein is the conventional chain pull for the purpose of selectively lifting and lowering the carriage 36. In order to retain the carriage 36 in the selected position, the chain 98 may be secured to any one of the chassis members.

Forming a part of the present invention is an improved auger, which will be described at this time. An outlet port 102 is provided in the said tube 58 adjacent the pulley bearing end thereof. The said outlet port 102 comprises a sleeve rigidly secured to said tube 58 and is adapted to receive a flexible conduit thereon, if so desired. On the opposite end of the said tube 58 there is a second sleeve 104 provided for the purpose of receiving a hopper 106 in removable relation therewith. An aperture 108 is provided opposite said sleeve 104 and in said tube 58. A removable cover 109 is provided over said aperture. A collar 116 is rigidly secured to the said tube 58 and the cover 109 is slidably received thereunder. For further securing purposes a pin 118 is inserted through appropriate apertures in the said cover and terminal portion of the tube 58. If so desired, a handle 120 may be provided on said cover 109 for removal and securing purposes. The operation of these last mentioned inlets is as follows: when it is desired to pick up grain and the like, the tube 58 may be inserted in a pile of said grain while the auger 60 picks up the same through the aperture 108. If it is found advantageous to supply grain manually to the said auger, the hopper 106 may be employed for receiving and directing said grain.

Also included in this invention is the provision of a stand for selectively supporting the chassis of the auger means. This stand or supporting means comprises a pair of collars 122 and 124 respectively which are rigidly secured to the boom 16 at selected portions thereof. A pair of stands 126 and 128 respectively are slidably received within said collars and bases 130 at the bottom ends thereof. Arcuate guides 132 are rigidly secured to said stands and arcuate covers 134 are removably secured to said guides. Suitable securing means, preferably bolts 136 are utilized to hold the guides and cover in a predetermined fixed relation. Suitable securing means, preferably bolts 138 are received in the collars 122 and 124 respectively for securing said stand 126 and 128 in a predetermined fixed relation relative to said collar. It is apparent from a comparative inspection of Figures 1 and 3 that the stand means may be utilized to hold the chassis in a relatively immovable fixed relation and may also be used to hold the auger in a fixed relation relative to the chassis 10. This latter expedient is desirous especially in the transportation of the mechanism

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from one location to another. Further, it will be readily apparent that the extension 32 may be removed from the shank 30 and also secured on the chassis in any suitable manner while the invention is in transit.

There has been described and illustrated a device capable of performing all of the specifically mentioned objects of this invention as well as others which are apparent to those skilled in the art. Various uses of the present invention, such as adjusting the selected stand 128 for receiving one end of the auger while the other stand 126 is bearing on the ground in order to hold the chassis, may be employed by the described structure. Accordingly, it is apparent that variations as to operation, size and shape, rearrangement of elements may be made herein without departing from the spirit of the invention. Accordingly, limitation is sought only in accordance with the scope of the following claims.

Having thus described the present invention what is claimed as novel and improved is as follows:

1. A grain loader comprising a chassis, wheels on said chassis, a dismantlable pole secured to said chassis, a carriage slidably received on said pole, a sleeve, means for pivoting said sleeve in said carriage, an auger rotatably disposed in said sleeve, means in said carriage for rotating said auger, means for adjustably and selectively raising and lowering said carriage and common means for supporting said sleeve and said chassis adjustably secured to said chassis.

2. A grain loader comprising a chassis, wheels on said chassis, a dismantlable pole secured to said chassis, a carriage slidably received on said pole, a sleeve, means for pivoting said sleeve in said carriage, an auger rotatably positioned in said sleeve, means in said carriage for rotating said auger, means for selectively raising and lowering said carriage, means for supporting said sleeve and said chassis adjustably secured to said chassis, collars on said chassis, said sleeve supporting means comprising stands extending through said collars and means for locking said stands in selective positions relative to said collars.

3. Means for loading grain comprising a wheeled chassis, a shaft secured to said chassis having a reduced shank extending therefrom, an extension removably secured to said shank, a carriage slidably secured to said shaft and extension, means for selectively raising and lowering said carriage, a sleeve, means for pivoting said sleeve to said carriage for slidable adjustment transversely of said pivot means, an auger rotatably journaled in said sleeve, means in said carriage for rotating said auger.

4. Means for loading grain comprising a wheeled chassis, a shaft secured to said chassis having a reduced shank extending therefrom, an extension removably secured to said reduced shank, a carriage slidably secured to said shaft and extension, means for selectively raising and lowering said carriage, a sleeve, means for pivoting said sleeve to said carriage for slidable adjustment transversely of said pivot means, an auger rotatably journaled in said sleeve, means in said carriage for rotating said auger, and means for supporting said carriage and said sleeve adjustably secured to said chassis.

5. Means for loading grain comprising a wheeled chassis, a shaft secured to said chassis having a reduced shank extending therefrom, an extension removably secured to said reduced

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shank, a carriage slidably secured to said shaft and extension, means for selectively raising and lowering said carriage, a sleeve, means for pivoting said sleeve to said carriage for sliding adjustment transversely of said pivot means, an auger rotatably journaled in said sleeve, means in said carriage for rotating said auger, a hopper removably secured at one end of said sleeve, an aperture adjacent said hopper, removable cover means over said aperture and a port at the opposite end of said sleeve, means for supporting said carriage and said sleeve adjustably secured to said chassis, collars secured to said chassis, said supporting means including stands slidably received in said collars and means for locking said stands in selective fixed relation relative to said collars.

6. Means for loading grain comprising a wheeled chassis, a shaft secured to said chassis having a reduced shank extending therefrom, an extension removably secured to said reduced shank, a carriage slidably secured to said shaft and extension, means for selectively raising and lowering said carriage, a sleeve, means for pivoting said sleeve to said carriage for sliding adjustment transversely of said pivot means, an auger rotatably journaled in said sleeve, means in said carriage for rotating said auger, means for supporting said carriage and said sleeve adjustably secured to said chassis, collars secured to said chassis, said supporting means including stands slidably received in said collars and means for locking said stands in selective fixed relation relative to said collars.

7. In a grain loader, a chassis, a pair of wheels rotatably received on said chassis, dismantlable support means secured at one end to said chassis, a cantilever bracket swivelly received on the opposite end of said support means, a carriage slidably and rotatably received on said support means, means on said carriage and bracket for selectively adjusting said carriage, a sleeve, means for pivoting said sleeve transversely of said support means, means for slidably securing said sleeve in said pivot means, an auger in said sleeve, power means in said carriage for rotating said auger.

8. In a grain loader, a chassis, a pair of wheels rotatably received on said chassis, dismantlable support means secured at one end to said chassis, a cantilever bracket swivelly received on the opposite end of said support means, a carriage slidably and rotatably received on said support means, means on said carriage and bracket for selectively adjusting said carriage, a sleeve, means for pivoting said sleeve transversely of said support means, means for slidably securing said sleeve in said pivot means, an auger in said sleeve, power means in said carriage for rotating said auger, collars on said chassis, and means for supporting said sleeve and said chassis adjustably received in said collars.

9. In a grain loader, a chassis, a pole attached at one end to said chassis, a carriage slidably secured to said pole, an auger, and a sleeve supporting said auger pivotally mounted on said carriage, means movable with said carriage for actuating said auger, the improvement which comprises a pair of spaced stands adjustably secured to said chassis supporting said sleeve and said chassis.

10. In a grain loader, a chassis, a pole attached at one end to said chassis, a carriage slidably secured to said pole, an auger, and a sleeve supporting said auger pivotally mounted on said carriage, means movable with said carriage for actuating

said auger, the improvement which comprises a pair of spaced stands adjustably secured to said chassis supporting said sleeve and said chassis, and means attached to said pole and said carriage for raising and lowering said carriage on said pole.

11. In a grain loader, a chassis, a pole attached at one end to said chassis, a carriage slidably secured to said pole, an auger, a sleeve supporting said auger pivotally mounted on said carriage, means movable with said carriage for actuating said auger, the improvement which comprises a pair of spaced stands adjustably secured to said chassis supporting said sleeve and said chassis, and means attached to said pole and said carriage for raising and lowering said carriage on said pole including a bracket rotatively secured to said pole, and a flexible member secured to said carriage and bracket.

12. In a grain loader, a chassis including a boom, wheels mounted on said chassis between the ends of said boom, a support attached at one end to said chassis and having a rotatably mounted bracket at the other end thereof, a carriage slidably secured to said support, a prime mover mounted on said carriage and movable therewith, an auger, a sleeve supporting said auger, means pivotally mounting said sleeve to said carriage, means drivingly connecting said auger and said prime mover, means carried by said rotatably supported bracket and said carriage for raising and lowering said carriage, and means attached adjacent the ends of said boom for supporting said sleeve and said chassis.

13. A grain loader comprising a chassis having wheels attached thereto, and a boom, a dismantlable support attached to said chassis substantially perpendicular to said boom, a carriage, means mounting said carriage on said dismantlable support for axial movement relative to said support and rotative movement around said support, an auger, means pivotally securing said auger to said carriage in a plane substantially parallel to the longitudinal axis of said support, and means attached to said boom for supporting said chassis and said auger.

14. A grain loader comprising a chassis having wheels attached thereto, and a boom, a dismantlable support attached to said chassis substantially perpendicular to said boom, a carriage, means mounting said carriage on said dismantlable support for axial movement relative to said support and rotative movement around said support, an auger, means pivotally securing said auger to said carriage in a plane substantially parallel to the longitudinal axis of said support, means attached to said boom for supporting said chassis and said auger, a bracket rotatably se-

cured to said support, and a cable and pulley system secured to said carriage and said bracket for raising and lowering said carriage and said auger.

15. A device for loading grain comprising a chassis having a dismantlable support secured thereto, a carriage slidably secured to said support, an auger, means pivotally securing said auger to said carriage for movement in a plane substantially parallel to the longitudinal axis of said support, a pulley secured to said carriage and said pivotal supporting means, means for actuating said pulley attached to said carriage, means driven by said pulley for actuating said auger, and means attached to said carriage and reacting on said support for raising and lowering said carriage.

16. In a device for loading grain, a chassis having a shaft associated therewith supporting wheels, a support attached to said chassis directly above said shaft, a carriage slidably supported on said support, an auger pivotally secured to said carriage, means attached to said carriage and reacting on said support for raising and lowering said carriage; the improvement which comprises; stands, means attaching said stands adjustably to said chassis in a position flanking said shaft to support said chassis and prevent tilting movement thereof about said shaft as an axis.

17. In a device for loading grain, a chassis having a shaft associated therewith supporting wheels, a support attached to said chassis directly above said shaft, a carriage slidably supported on said support, an auger pivotally secured to said carriage, means attached to said carriage and reacting on said support for raising and lowering said carriage; the improvement which comprises; stands, means attaching said stands adjustably to said chassis in a position flanking said shaft to support said chassis and prevent tilting movement thereof about said shaft as an axis, and to support said auger when said carriage is in a lowered position.

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