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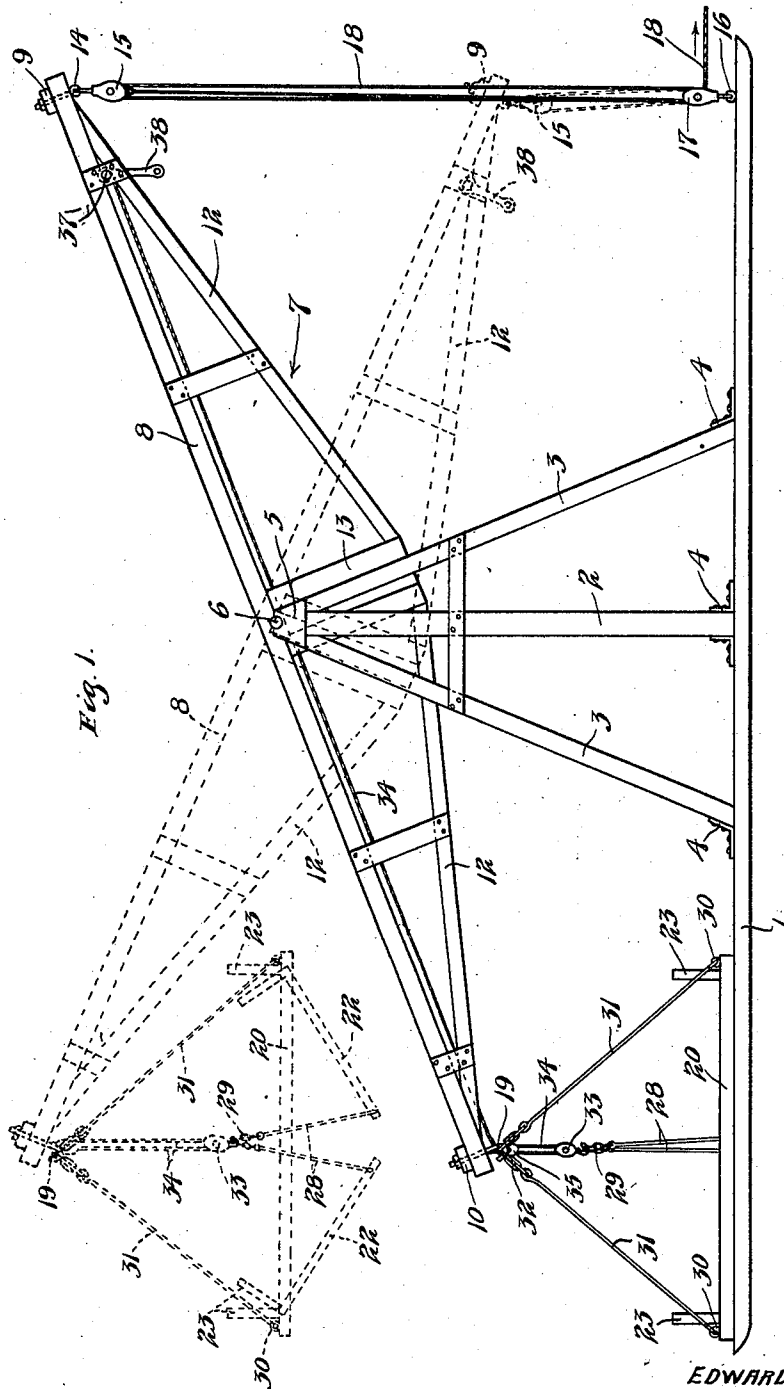
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E. JOHNSON

MANURE AND GRAVEL LOADER

Filed Jan. 20, 1923

3 Sheets-Sheet 1



INVENTOR.
EDWARD JOHNSON.
BY HIS ATTORNEY

James F. Williamson

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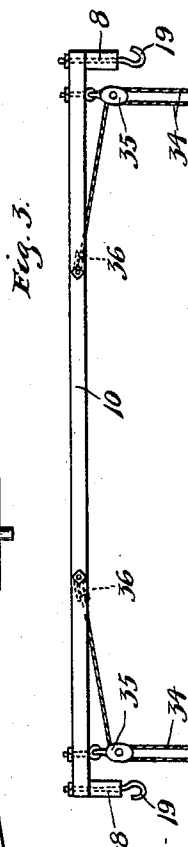
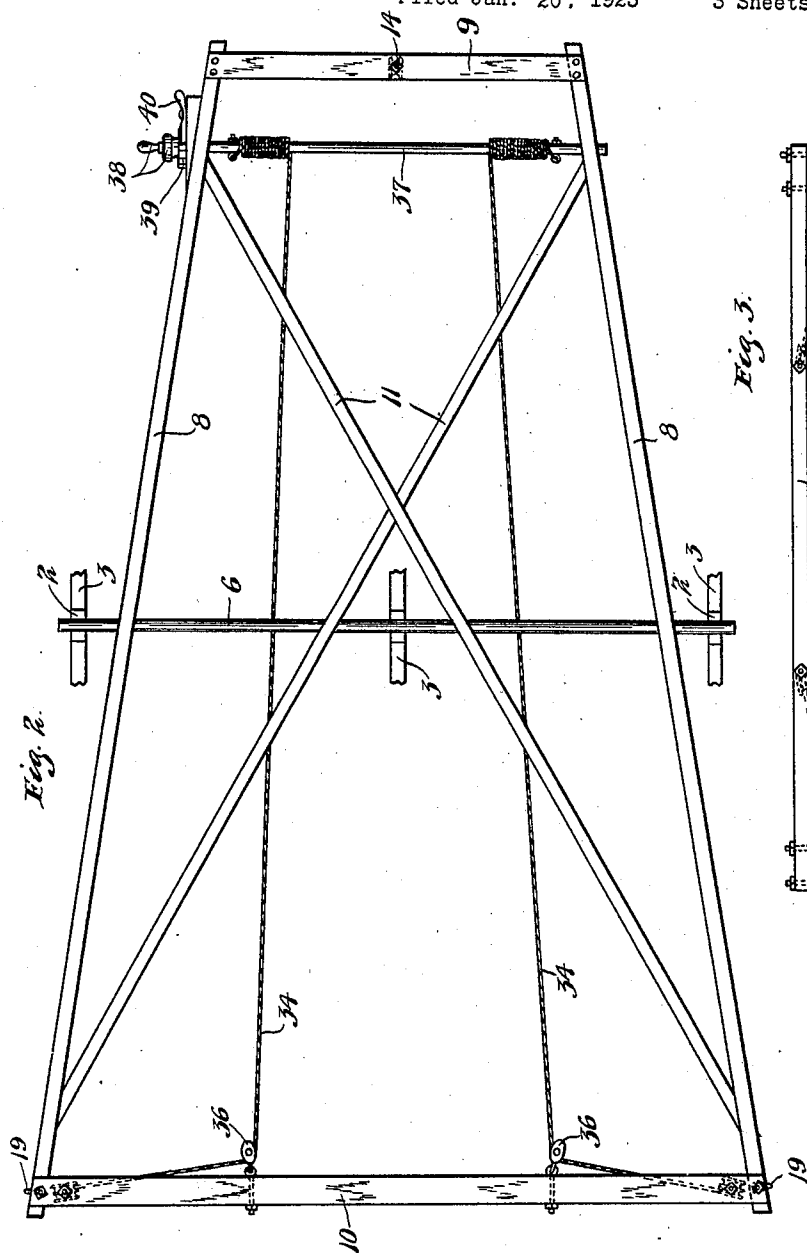
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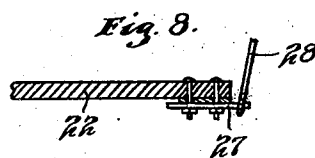
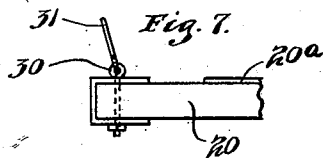
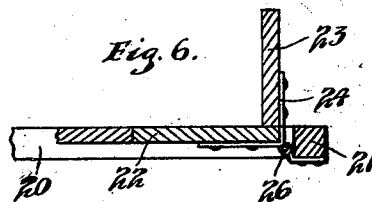
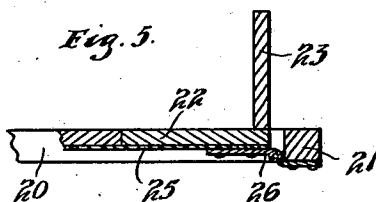
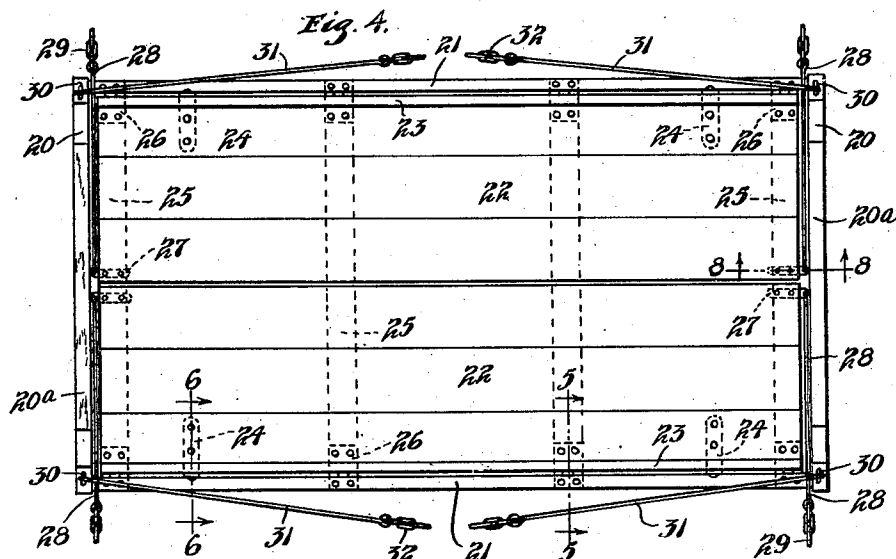
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

EDWARD JOHNSON, OF COOPERSTOWN, NORTH DAKOTA.

MANURE AND GRAVEL LOADER.

Application filed January 20, 1923. Serial No. 613,872.

To all whom it may concern:

Be it known that I, EDWARD JOHNSON, a citizen of the United States, residing at Cooperstown, in the county of Griggs and State of North Dakota, have invented certain new and useful Improvements in Manure and Gravel Loaders; and I do hereby declare the following to be a full, clear, and exact description of the invention such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a loading device, and particularly to such a device constructed and arranged to load manure, gravel, etc., onto a manure spreader, wagon or other vehicle, and the device is particularly designed for work about a farm. As is well known, the stable manure on the farms is usually hauled to the fields at certain periods and the hand loading of this material occupies a large part of the time. Considerable hauling of gravel for road work is also done by people in rural communities and elsewhere, the hand loading usually takes the greater part of the time.

It is an object of this invention, therefore, to provide a device upon which the manure or gravel can be placed by scrapers drawn by teams and the material then elevated and loaded onto a wagon or other vehicle by one operation.

It is a further object of the invention to provide such a device comprising an upright frame on which is mounted a swinging beam having means at one end by which it can be depressed and having a loading device at its other end beneath which the vehicle may be driven to receive the load.

It is still another object of the invention to provide a loading device comprising a platform having swinging doors or sections therein hinged along their outer sides so that they may be swung downwardly to discharge the load.

It is more specifically an object of the invention to provide such a platform having a rectangular frame with a pair of doors therein hinged about their outer sides, rods pivoted to the ends of said doors, means on the elevating beam for operating said doors and supporting means on said rectangular frame adapted to be attached to said beam by which the platform may be lifted.

These and other objects and advantages of the invention will be fully set forth in

the following description made in connection with the accompanying drawings in which:—

Fig. 1 shows a view of the device in side elevation, another position thereof being shown in dotted lines;

Fig. 2 is a top plan view of the loading beam also showing a portion of the vertical frame;

Fig. 3 is an end view of the loading beam, as seen from the left hand side of Fig. 2;

Fig. 4 is a plan view of the loading platform;

Fig. 5 is a partial vertical section taken on the line 5—5 of Fig. 4;

Fig. 6 is a vertical section taken on the line 6—6 of Fig. 4;

Fig. 7 is a partial view in end elevation of the platform; and

Fig. 8 is a vertical section taken on the line 8—8 of Fig. 4.

Referring to the drawings, the device comprises a base portion having spaced longitudinal members 1 which are formed with curved ends to constitute sled runners. Mounted on said base members or sills is a central vertical frame comprising the members 2 and 3, which frame, as shown, is of triangular formation and the members 2 and 3 forming the same are connected by metal plates 4 to the base member 1, said members also being tied by a suitable plate 5 at their upper ends. The said vertical frame comprises three portions, as indicated in Fig. 2, which portions will be suitably tied together and made rigid with connecting pieces and braces not shown. The shaft 6 is mounted in suitable bearings on the top of the vertical frame members and forms the pivot shaft for a beam member designated generally as 7 which is formed with suitable trunnions fitting over the shaft 6 and comprises spaced longitudinal members 8 tied together at their ends by members 9 and 10 and suitably braced by cross brace members 11. The beam 7 is of trussed formation and comprises trusses at each side extending below the members 8 and comprising the diagonal members 12 rigidly and securely fastened to the vertical side members 13. Suitable cross pieces and brace plates also extend between the members 12 and 8 so that a beam of strong and rigid truss form is provided. As shown in Fig. 2, the member 10 is of considerably greater width than the end member 9 so that in

plan, the beam is of trapezoidal shape. The member 9 has secured centrally thereof and depending therefrom, an eye bolt 14 adapted to receive a tackle block 15. Another eye
 5 bolt 16 projects upwardly from the base member 1 beneath the member 9 and has attached thereto a suitable tackle block 17. A rope, cable or other flexible member 18 is secured to the block 15 and passed one
 10 or more times around the tackle blocks 15 and 17 and extends from the latter, as indicated by the arrow in Fig. 1, said flexible member being adapted to be drawn out by a team of horses or other tractor. The mem-
 15 ber 10 has secured adjacent each end and depending from the underside thereof, hook members 19 forming the supports for a loading platform to be now described.

Said loading platform comprises a rectangular frame member having end pieces 20
 20 and side pieces 21, said pieces being suitably reinforced at the corners and bound together thereat by metal plates. A metal plate or bar 20a is also secured to the top
 25 of the members 20 and extends longitudinally thereof. Disposed within the said rectangular frame are door sections 22 illustrated as formed of longitudinally extending planks or panels but having side panels
 30 23 upstanding therefrom at their outer sides, said panels 23 being secured to said sections by metal angle members 24. The ends of the sections 22 have extending thereunder metal plates 25 and hinges 26 are secured to
 35 said plates and to the side members 21 so that the doors or sections 22 are hinged to the sides of the rectangular frame for downwardly swinging movement. Short metal plates 27 are secured to the doors 22 and
 40 project from the ends thereof adjacent the inner corners of said doors and said plates have pivoted in apertures therein, rods 28, which rods are illustrated as having a plurality of links 29 at their other ends. It
 45 will be noted that said rods, when in horizontal position, are disposed between the ends of the doors 22 and the end members 20 of the frame. Suitable eye bolts 30 are secured at each corner of said rectangular
 50 frame and have pivoted therein the lower ends of rods 31, which rods also have secured to their other ends a plurality of chain links 32. Certain of the links 32 are adapted to be engaged in the hook members
 55 19 depending from the end members 10 of the beam and thus form the support for the platform. The links 29 on the rods 28 at each end of the frame are adapted to be engaged in a hook depending from a tackle
 60 block 33, it being understood that there is such a tackle block and hook for the rods at each end of the doors 22. Said tackle blocks 33 are carried by ropes or flexible members 34 which pass over pulley blocks 35 swing-
 65 ingly mounted by suitable eye bolts adjacent

the ends of members 10 and depending therefrom. Said flexible members 34 also pass over pulleys in blocks 36 swingingly mounted in suitable eye bolts projecting at the inner side of the members 10 and said
 70 flexible members extend lengthwise of the beam and are adapted to be secured to eye bolts extending through a windlass shaft 37 about which shaft said flexible members are adapted to be wound. The shaft 37 is
 75 journaled in the members 8 of the beam adjacent the end member 9 and projects at one side thereof where it is equipped with a hand crank member 38, and a suitable ratchet 39 and pawl 40.

In operation, the device will be set so that the top of the base member 1 is substantially flush with the surface of the ground. The platform will be lowered into the position
 80 shown in Fig. 1 and the links 29 and 32 on rods 28 and 31, respectively, will be removed from the respective hooks, the rods 28 being disposed at the ends of the rectangular frame of the platform, as shown in Fig. 4,
 85 and the rods 31 disposed at the sides of the platform. The material to be loaded can now be placed on the platform in any suitable manner and is preferably loaded by scrapers drawn by teams of horses. The rods 28 will be protected and kept from con-
 90 tact with the scrapers by the end members 20 and the iron plates 20a on the latter members will prevent wear thereon. The material may be loaded onto both ends of the platform and the ends of the platform
 95 will thus be kept fairly clear. When sufficient material has been placed upon the platform, the rods 28 and 31 will be hooked up by their respective links, as shown in Fig. 1. The windlass shaft 37 is turned until the
 100 flexible members 34 are taut and the rods 28 stand in substantially vertical position and the shaft is held in this position by the pawl and ratchet members 39 and 40. Power is now applied to the cable 16 and the
 105 end member 9 of the beam will be drawn downwardly, as indicated in the dotted line position, Fig. 1, the load of material and the platform being consequently raised. The wagon, manure spreader, or other vehicle to
 110 receive the load of material will now be driven under the platform and the load of material can be dumped therein by operation of the doors or sections 22 by manipulating the crank 38. Owing to the diameter
 115 of shaft 37, the crank can be easily controlled manually, but if desired, the pawl 40 may be simply raised and the weight of the load allowed to swing the doors 22 down-
 120 wardly and rotate the shaft 37. The load of material having been thus discharged, the door sections 22 are again drawn to closed position and the windlass locked in place. The end member 10 of the beam is
 125 then lowered to the position shown in full
 130

lines in Fig. 1, and the loading operation will be repeated.

From the above description it is seen that applicant has provided a simple and efficient form of loading device and one having great utility about a farm or similar establishment. The material can be quickly loaded on the platform by means of horses or tractors and the same then very quickly loaded into the wagon. The device is preferably constructed of lumber which is of a type easily procurable and the device is reinforced with suitable metal plates. By mounting the device on the base member 1 the same can be readily drawn about to the desired place of use. The machine is easily constructed and comprises only parts which are usually readily obtainable on a farm or in rural communities. The machine has been thoroughly demonstrated in actual use and found to be very efficient for the purpose intended.

It will, of course, be understood, that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of applicant's invention, which, generally stated, consists in the matter shown and described and set forth in the appended claims.

What is claimed is:

1. A loading device comprising, a vertical supporting frame, a horizontal shaft mounted therein adjacent the top thereof, a trussed beam pivoted substantially centrally on said shaft, means at one end of said beam for pulling said end downwardly, a loading platform suspended from the other end of said beam comprising a rectangular frame and doors disposed therein and hinged along the side thereof, and means mounted on said beam for operating said doors.

2. A loading device comprising a beam mounted to swing about an elevated horizontal axis, a loading platform suspended at one end of said beam comprising an open rectangular frame, doors disposed within and hinged along the sides of said frame, rods pivoted adjacent the inner edges of said doors at the ends thereof and adapted to be disposed between said doors and the ends of said frame, and means connected to said rods and supported on said beam for swinging said doors about the hinges to close and open the same.

3. A loading device comprising a beam mounted to swing about an elevated horizontal axis, said beam having a transverse member at one end having depending hooks at each end thereof, a loading platform comprising a rectangular frame, rods pivoted at each corner of said frame and having

links at their other ends, a pair of said rods at each end of said frame being adapted to have the links carried thereby engaged over one of said hooks, doors disposed in said frame and hinged thereto along the sides thereof, rods pivoted to the inner corners of said door, and means on said beam connected to said rods and adapted to move the same to swing said doors.

4. A loading device comprising a beam mounted to swing about a horizontal axis, a loading platform suspended from one end thereof comprising an open rectangular frame, doors disposed in said frame and hinged thereto along the sides thereof, rods pivoted adjacent the inner edges of said door at the ends thereof, flexible members carrying means adapted to engage the pairs of rods at each end of said doors and passing over pulleys supported on said beam, and a windlass mounted in one end of said beam for controlling said flexible members to open and close said doors.

5. A loading device having in combination, a beam mounted for swinging movement about a horizontal axis, a windless shaft journaled in said beam and extending transversely adjacent one end thereof, a pawl and ratchet mechanism for said shaft, a pair of spaced pulleys swingingly mounted on the other end of said beam at the inner side thereof, a pair of spaced swingingly mounted pulleys depending from the last mentioned end of said beam adjacent the corners thereof, a loading platform suspended from the last mentioned end of said beam having downwardly swinging sections therein, means attached to each end of said sections, and flexible members secured to said means running over one of each of said pairs of pulleys and secured to each end of said windless shaft.

6. A loading device comprising a platform having an open rectangular frame, a pair of doors disposed in said frame and hinged along the sides thereof, said doors having side panels upstanding therefrom at their outer longitudinal edges, rods pivoted at one end to said doors adjacent the inner corners thereof and between said doors and the ends of said frame and adapted to be disposed between said doors and frame, said rods having a plurality of links at their other ends, rods pivoted at each corner of said frame, members connected to the other ends of said last mentioned rods to lift said platform, and means connected to the links of said first mentioned rods to swing said doors on their hinges.

In testimony whereof I affix my signature.

EDWARD JOHNSON,