M. G. BEAN.

PORTABLE DERRICK.

APPLICATION FILED MAR. 25, 1911.

1,030,765. Patented June 25, 1912.

2 SHEETS—SHEET 1.

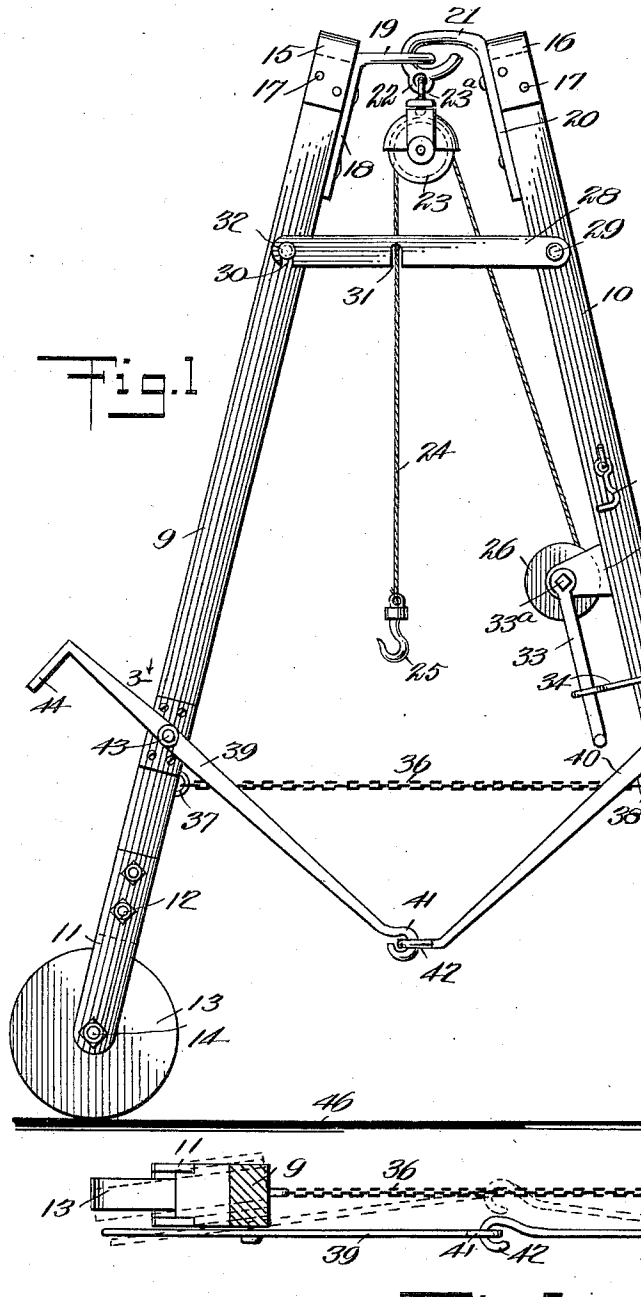

Fig. 1

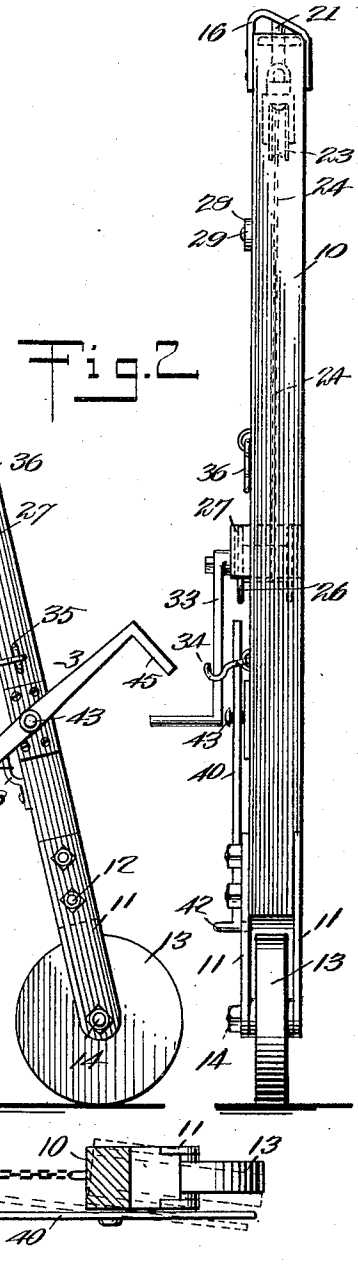

Fig. 2

Fig. 3

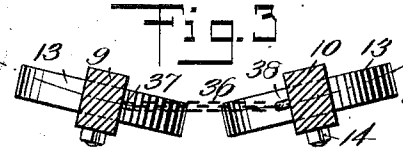

Fig. 4

WITNESSES:

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Walton Harrison

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Mathias G. Bean

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2 SHEETS—SHEET 2.

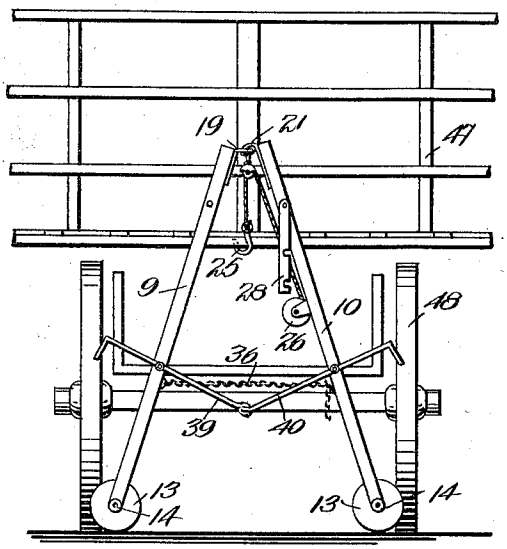

Fig. 5

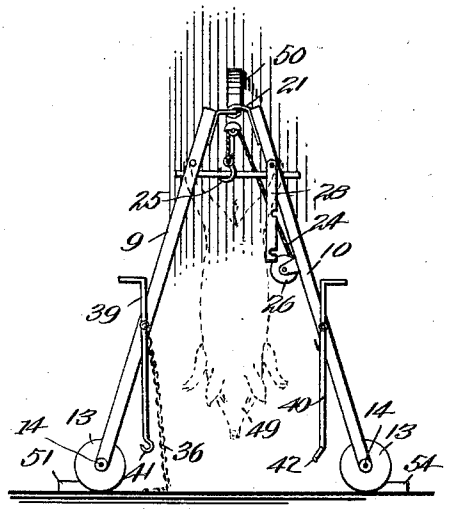

Fig 6

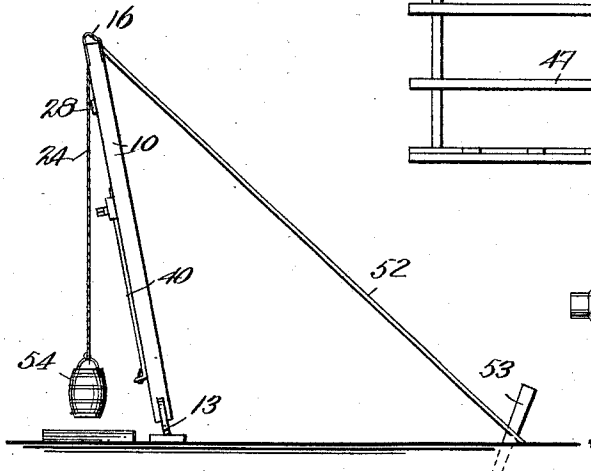

Fig. 7

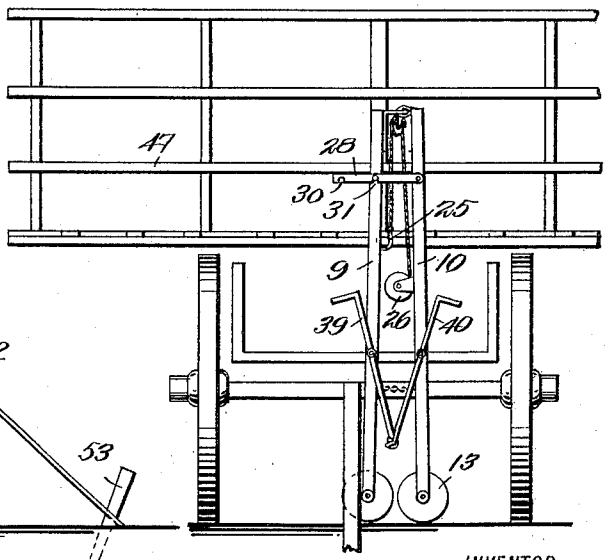

Fig. 8

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MATHIAS G. BEAN, OF BLUEGRASS, NORTH DAKOTA.

PORTABLE DERRICK.

1,030,765. Specification of Letters Patent. Patented June 25, 1912.

Application filed March 25, 1911. Serial No. 616,791.

To all whom it may concern:

Be it known that I, MATHIAS G. BEAN, a citizen of the United States, and a resident of Bluegrass, in the county of Morton and State of North Dakota, have invented a new and Improved Portable Derrick, of which the following is a full, clear, and exact description.

My invention relates to portable derricks—that is, to small derricks adapted to be carried around by hand or on wagons and handled preferably by one person.

More particularly stated, my improved portable derrick comprises a pair of posts swiveled relatively to each other and adapted to be folded to different angles relatively to each other for different purposes and embodies a number of structural improvements whereby its efficiency as a derrick and also its compactness and adaptability are greatly increased.

Reference is made to the accompanying drawings forming a part of this specification and in which like numbers indicate like parts.

Figure 1 is a side elevation of my improved derrick complete and resting upon the ground ready for use; Fig. 2 is a side elevation of the same; Fig. 3 is a horizontal section on the line 3—3 of Fig. 1 looking in the direction of the arrow; Fig. 4 is a fragmentary horizontal section showing certain parts occupying different positions from those indicated in Fig. 3; Fig. 5 is a side elevation showing my device used for lifting a hay rack, the application of the power being at a point substantially midway between the ends of said rack; Fig. 6 shows my improved derrick used for supporting the carcass of an animal; Fig. 7 is a side elevation showing my derrick as employed for raising a well bucket or a weight analogous thereto; Fig. 8 is a side elevation showing how the derrick may be employed at the front end of a hay rack for lifting the latter.

I provide two posts 9, 10 and at the bottoms of these posts I secure caster plates 11 by aid of bolts 12. There are two caster plates to each post. Located between the caster plates and journaled relatively thereto are caster wheels 13 which are provided with axles 14. Mounted upon the tops of the posts 9, 10 are shield plates 15, 16 bent substantially into U-form and held in position by fastenings 17. At 18 is a bracket which is provided with an eye 19 integral with it and is secured firmly upon the upper end of the post 9. Another bracket 20 is similarly mounted upon the upper end of the post 10 and is provided with a hook 21 which extends through the eye 19. The hook 21 is provided with a small eye 22 for supporting a pulley 23. This pulley is provided with a swivel hook 23^a which extends through the eye 22. A rope 24 engages the pulley 23 and carries a swivel hook 25. The rope 24 is partially wound upon a winding drum 26 having generally the form of a spool. This winding drum is journaled in a bracket 27 which thus serves as a bearing. This bracket is secured rigidly upon the post 10. At 28 is a brace bar which, by aid of a pivot-pin 29 is connected with the post 10. The brace bar is provided adjacent to its free end with a notch 30 and is further provided with a notch 31, the latter, however, being removed a little distance from said free end. A pin 32 extends into the post 9 at a point opposite the pin 29 upon the post 10. The brace bar 28 may be brought into such a position that the notch 30 or the notch 31, as the case may be, will fit over the pin 32. When the parts are disposed as indicated in Fig. 1, the notch 30 is the one which receives the pin 32. A hand crank 33 is connected with the drum 26 by aid of an axle 33^a, one end of which is squared, as indicated in Fig. 1. The crank 33 may be removed and replaced at will. A hook 34 is mounted upon a staple 35 and may be brought into engagement with the crank 33 so as to prevent retrograde movements thereof, or in other words to prevent the drum 26 from turning backward, as will be understood from Fig. 1. A chain 36 is permanently connected with the post 9 by aid of a staple 37 and is also detachably connected to the post 10 by aid of a hook 38. The operator may at will slip the chain off the hook 38. Two hand levers 39, 40 are provided. The hand lever 39 carries a hook 41 integral with it and the hand lever 40 is similarly provided with an eye 42 to be engaged by this hook. The hand levers 39, 40 are journaled upon stud shafts 43 which are rigidly mounted upon the posts 9, 10. The hand levers are provided respectively with handles 44, 45 whereby they may be manipulated at will. The caster wheels 13 are adapted to rest

upon the ground 46 or other appropriate surface.

At 47 (Fig. 5) is a hay rack which, in this instance, is being lifted from a wagon 48 by aid of the derrick. The hook 25 engages the lower middle portion of the rack. In Fig. 6 the device is shown as applied for supporting the carcass of a hog or other animal. In this instance, a stick 50 is lodged against the side of a building and the posts 9, 10, with their pivotal connection, lean toward the building and against the adjacent end of the stick. Chocks 51 which may, if desired, be merely brickbats or blocks are lodged against the caster wheels 13 in order to prevent the latter from rolling and thus displacing the position of the burden thus sustained by the derrick. In Fig. 7, the device is shown as applied in still another manner. A cord 52, or a pole, is connected with the top portion of the device, and secured to an anchor 53, which may be merely a pin driven into the ground. The posts 9, 10 are thus supported in slightly inclined positions. A well bucket 54, or a weight analogous to the same, may be raised by aid of the apparatus.

In Fig. 8, I show the derrick as used for lifting the front end of a hay rack.

The operation of my device is as follows:—The parts being assembled, as above described, and as shown more particularly in Fig. 1, the hook 25 is brought into engagement with the object to be lifted. The hook 41 which is detachable from the eye 42 is left in connection with the latter, as indicated in Fig. 1. Whenever the drum 26 is to be wound by aid of the hand crank 33, the drum is now turned and the rope 24 is wound upon it to any desired extent. This causes the hook 25 to ascend and lift the burden. In some instances, it is desired that the caster wheels 13 be close together, as indicated in Fig. 8, and in other instances the operator may desire that the caster wheels be spaced apart. This is covered by the brace bar 28, the notch 30, 31 of which, slipped over the pin 32, determines the extent to which the caster wheels are spaced apart.

In lifting the front end of a hay rack, it is usually desirable that the caster wheels be close together and they are so placed for this purpose. When, however, the middle or rear of the hay rack is being lifted, the wheels 13 should sometimes be very far apart and in this case the length of the chain 36 determines the distance apart of the caster wheels. The brace bar 28 need not therefore be used in all instances. It serves to render the posts 9, 10 temporarily rigid relatively to each other. If, however, more flexibility is required, the brace bar 28 may be detached from the post 9 and allowed to hang down. The chain 36 now prevents the posts 9, 10 from moving too far apart at the bottom.

In some instances, the operator may desire to not only lift a burden, such as a hay rack, but may also wish to turn the derrick while the lift is being made; as for instance to facilitate the loading or unloading of the hay rack or other heavy burden relatively to a wagon. The joint made by the eye 19 of the post 9 and the hook 21 of the post 10 is sufficiently flexible to enable the posts 9, 10 to be turned 180° either way from the normal positions shown in Fig. 1. The chain 36 is connected with the posts 9, 10 at such points that the pull of the chain is in a sense always upon a center, that is to say, if the posts 9, 10 be turned slightly in opposite directions, as indicated in Fig. 4, the pull upon the chain is not increased or diminished to any material extent. Consequently, the pull of the chain 36 upon the posts 9, 10 has no tendency to produce any torque in either or both of these posts. Again, the hand levers 39, 40 being flexibly connected with each other are free to turn slightly and if desired they may, as above stated, be disconnected from each other. The operator by grasping the handle of either hand lever 39 or 40 may turn the adjacent posts 9, 10 slightly, and in doing this he necessarily turns the other post to the same extent as will be understood from Fig. 3. The operator by manipulating either of the hand levers 39, 40 may thereby shift the load to his right or left and may also manipulate both posts 9, 10 in such a manner as to attain considerable advantage in handling the burden. By turning the posts slightly in relation to each other, as indicated by full lines in Fig. 4, or by dotted lines in Fig. 3, the operator can so incline the plane of one caster wheel 13 relatively to the other that when the derrick as a whole is pushed forward the front wheel tends to move in a circle and the rear wheel tends to follow in the same track as the front wheel. This arrangement is of special convenience for working around corners of wagons or buildings or operating in many other relations where it is desirable that the derrick shall be brought into different angular positions relatively to the work.

When the derrick is not in use, it may be folded into compact form by merely bringing the arms 9 and 10 substantially parallel with each other and moving the brace rod 28 so that the notch 31 slips over the pin 32. For this purpose, the hand levers 39, 40 may be turned slightly upon the posts 9, 10. The operator may now take hold of either post 9, 10 and by grasping one of the handles 44, 45 can trundle the derrick along as easily as he could move a wheelbarrow. Again, the operator can tilt the derrick over so that

only one wheel rests upon the ground and may then trundle it somewhat after the manner of manipulating a wheelbarrow.

While for convenience I show only one form of my device, I reserve the right to make reasonable variations in the various parts, and I do not limit myself to any particular use to be made of my invention, the scope of which is commensurate with my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A portable derrick, comprising a post provided at the end thereof with an eye, another post provided at its ends with a hook engaging said eye, a chain extending across from one post to the other to prevent the posts from moving apart at the bottom, mechanism connected with said posts for turning them to different angles relatively to each other, and lifting mechanism supported by said post.

2. A portable derrick, comprising two posts, mechanism for flexibly connecting the same together at their upper ends, a hand lever mounted upon one of said posts and provided with an eye, a hand lever mounted upon the other post and provided with a hook, said hook extending through said eye and forming therewith a swivel connection for enabling said posts to turn slightly in relation to each other, and lifting mechanism supported by aid of said posts and said swivel connection.

3. The combination of a pair of posts, a swivel connection from the end of one of said posts to the end of the other in order to enable said posts to be turned slightly in relation to each other, a pair of hand levers each pivotally mounted upon said posts, said hand levers being provided with portions whereby they may be flexibly connected together, a flexible connection extending from the inner face of one of said posts to the inner face of the other of said posts, and lifting mechanism supported by said posts.

4. A portable derrick, comprising a pair of posts, a swivel connection from the end of one of said posts to the end of the other for enabling said posts to turn relatively to each other, a flexible connection from the inner face of one post to the inner face of the opposite post in order to facilitate said turning, and a pair of hand levers pivotally connected together, each hand lever being mounted upon one of said posts and controllable by the operator for turning the post upon which it is mounted.

5. The combination of a pair of posts, a swivel connection from the end of one of said posts to the end of the other for the purpose of allowing a limited turning movement as between the posts, a flexible connection extending from one post to the other, a pair of hand levers, each being journaled upon one of said posts, one of said hand levers having a swivel connection with the other in order to facilitate said turning movement.

6. In a derrick, the combination of a plurality of posts, means for flexibly connecting said posts together at their upper ends, a caster wheel mounted at the bottom of each post, lifting mechanism supported by said posts, and hand levers mounted upon said posts and pivotally connected together, said hand levers being controllable at will for angularly turning said posts relatively to each other for the purpose of disposing said caster wheels in different planes in order to control the direction of travel of said posts upon a supporting surface.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATHIAS G. BEAN.

Witnesses:
FRANK ELLMEIN,
WILHELMINE BLUM.