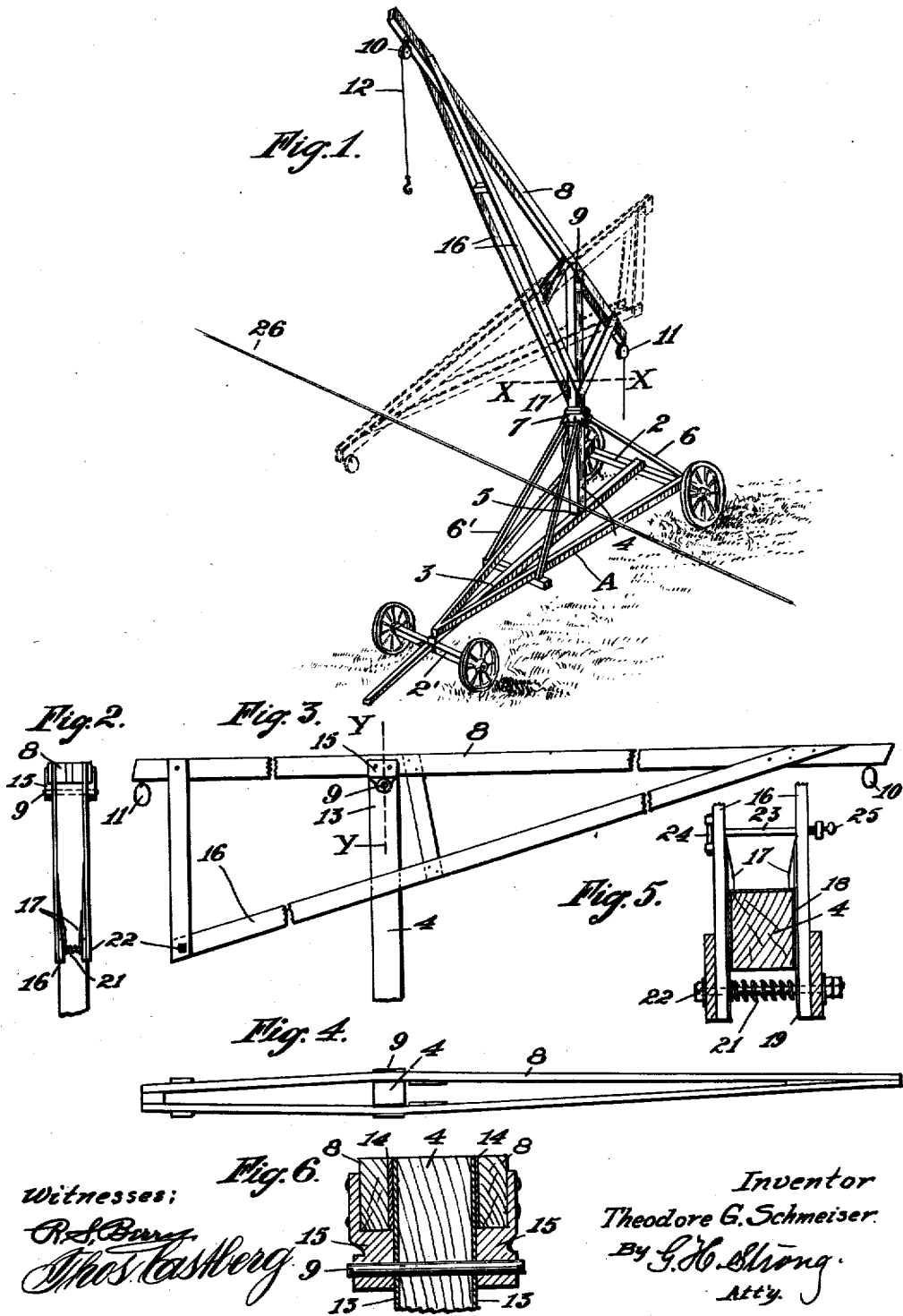


T. G. SCHMEISER.
 PORTABLE DERRICK.
 APPLICATION FILED JUNE 28, 1911.

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UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THEODORE G. SCHMEISER, a citizen of the United States, residing at Davis, in the county of Yolo and State of California, have invented new and useful Improvements in Portable Derricks, of which the following is a specification.

This invention relates to improvements in portable cranes or derricks which are especially designed for use in loading or stacking hay.

It is the object of this invention to provide a derrick which is adapted to be moved readily from place to place, and over ordinary roads or across fields, and which is so constructed as to admit of the boom being tilted so that the derrick may be readily passed beneath high power electric wires, or other over-head obstructions without danger, and without otherwise having to cut the wires or dismantle the derrick.

A further object is to provide a simple and efficient method for mounting the boom, and for retaining it in its uppermost normal rigid position when in operation.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of the invention. Fig. 2 is an end view of the triangular boom. Fig. 3 is a side view of same as disposed in a horizontal position. Fig. 4 is a plan view of same. Fig. 5 is an enlarged section on the line X X, of Fig. 1. Fig. 6 is an enlarged section on the line Y Y, of Fig. 3.

In the drawings A represents an A-frame supported at its rear end on an axle 2 and at its forward end or apex portion on the reach 3. The rear end of the reach is attached to the upper side of the axle, and the A-frame at its forward end is so supported above the reach that the frame will be substantially horizontal when the apparatus has been placed on wheels. The axle 2 is of such length that the hind wheels are separated sufficiently so as to offer a solid foundation

for the apparatus when a load is being lifted and transported by the derrick. The forward end of the reach is adapted to be attached to the front axle 2' of an ordinary farm-wagon. The hind wheel of the same wagon may be used in connection with the axle 2, so that no especial running gear further than that described, is necessary.

A pillar or mast 4 is stepped on the reach at 5 and is supported in a vertical position by means of the convergent trapezoidal frames 6—6'. The base of each of these frames 6—6' rests transversely upon the A-frame and at their top are secured to a journal block 7, in which the mast 4 is turnable.

8 is a boom which is pivoted at 9 to the mast 4 to swing in a vertical plane.

The mast carries sheaves 10—11 at either end through which a fall-rope 12 passes. Any suitable gripping and conveying means, as a derrick fork, may be carried at the outer end of the rope 12.

The essence of the present invention lies in the method of mounting the boom on the mast to admit of the boom being tilted in a vertical direction so that it may be lowered when it is necessary to pass beneath overhead wires or other obstructions, and also in the manner of automatically locking the boom in its uppermost position.

The boom consists substantially of a pair of parallel triangular frames connected together at their ends and sprung apart at the point of juncture with the mast, and disposed astride of the latter as shown in Fig. 4. Mounted on the upper end of the mast are cheek-plates 13 against which other cheek-plates 14 on the inner faces of the boom frames are in slidable contact. Mounted on the boom frames are bearing blocks 15 for the pivot pin 9, which is mounted on the mast and extends through the cheek-plates 13, as shown in Fig. 6. The cheek-plates 13 and 14 form a substantial lateral bearing between the pivoted boom and the mast.

Mounted on the inner faces of the lower angular springy extensions or braces 16 of the boom frame, and at a suitable distance

from the angle thereof, is a pair of oppositely disposed wedge-shaped locking lugs 17 which are adapted when the braces 16 are sprung apart to allow the longer end of the boom to drop as shown in dotted lines Fig. 1; or when the short end of the boom is pulled down to slide over the sides of the mast and become engaged at the front thereof, as shown in Fig. 5, and hold the boom in its uppermost operative position, as indicated in full lines in Fig. 1.

Cheek-plates 18 are provided on the sides of the mast at the point of engagement with the boom braces 16; similar cheek-plates 19 being provided on the inner faces of the braces, as shown in Fig. 5.

The braces are springy and are adapted to be spread so as to tend to throw the lugs 17 out of engagement with the mast, by means of a spring 21 which surrounds a bolt 22 which passes through the braces on the side of the mast opposite the lugs 17 (Fig. 5). The spreading of the braces is limited by the heads on bolt 22.

In order to securely clamp the braces against the mast so as to prevent the locking lugs 17 being inadvertently disengaged therefrom, I have shown a hinged clamp bar 23 pivotally mounted on one brace member at 24, and adapted to extend under and alongside of the other member against the frame, as shown in Fig. 5 and carrying a wing bolt 25 adapted to be screwed against the outside of the adjacent brace member in such manner as to draw the two members toward each other and clamp them against the sides of the mast.

In operation the boom stands in the elevated full line position, as shown in Fig. 1 when the device is used as a derrick. The boom being securely braced and held rigidly in position on its mast by the engagement of the locking lugs 17 in front of the mast; the clamping bar 23 securely holding the parts in locked rigid position. In the event the derrick is to be moved from one position or field to another or along country roads and is required to pass under telegraph, telephone or high tension power wires, all the operator has to do is to loosen the clamp screw 25 allowing the bar 23 to drop down, whereupon the spring 21 will spread the braces of the boom, allowing the front end of the boom to fall and assume the dotted line position of Fig. 1; the downward movement of the boom being controlled by the fall-line 12. With the boom thus in a lowered position the point of the longer arm of the boom will engage beneath any low hanging wire, which latter is indicated at 26, and the wire will be crowded up as the vehicle travels along and finally

dropped behind the apparatus without causing any trouble.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a portable derrick having a mast, a triangular boom pivoted intermediate its ends on the mast to swing in a vertical plane, said boom divided longitudinally and disposed astride the mast, and means for temporarily locking the boom against movement in relation to the mast, said means consisting of a pair of wedge-shaped locking lugs mounted on said boom and adapted to engage the mast.

2. In a portable derrick having a mast, a triangular boom pivoted intermediate its ends on the mast to swing in a vertical plane, said boom divided longitudinally and disposed astride the mast, and means for temporarily locking the boom against movement in relation to the mast, said means consisting of a pair of wedge-shaped locking-lugs mounted on said boom and adapted to engage the mast, and a clamp for retaining said locking-lugs in engagement with the mast.

3. In a portable derrick having a revolvable mast, a boom composed of a pair of triangular frames sprung apart and disposed astride the mast and pivotally mounted thereon; means for temporarily locking the boom against movement in relation to the mast, and means for releasing the locking means to permit the boom to rock vertically on its pivotal bearing.

4. In a portable derrick having a revolvable mast, a boom composed of a pair of triangular frames sprung apart and disposed astride the mast and pivotally mounted thereon; and means for temporarily locking the boom against movement in relation to the mast, said means including a pair of wedge-shaped locking-lugs and a clamp for retaining said locking-lugs in engagement with the mast.

5. In a portable derrick having a revolvable mast, a boom composed of a pair of triangular frames sprung apart and disposed astride the mast and pivotally mounted thereon; means for temporarily locking the boom against movement in relation to the mast, said means including a pair of wedge-shaped locking-lugs and a clamp for retaining said locking-lugs in engagement with the mast, and means for releasing the locking-lugs from engagement with the mast to permit the boom to rock vertically on its pivotal bearing.

6. In a portable derrick having a revolvable mast, a boom composed of a pair of triangular frames sprung apart and disposed

astride the mast and pivotally mounted thereon; means for temporarily locking the boom against movement in relation to the mast, said means including a pair of wedge-shaped locking-lugs and a clamp for retaining said locking-lugs in engagement with the mast, and means for releasing the locking-lugs from engagement with the mast to permit the boom to rock vertically on its pivotal bearing, said means consisting of a

helical spring disposed between the triangular frames to normally spread them apart at a point near the locking-lugs.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THEODORE G. SCHMEISER.

Witnesses:

L. M. ROGERS,

W. R. MATTHEW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."