

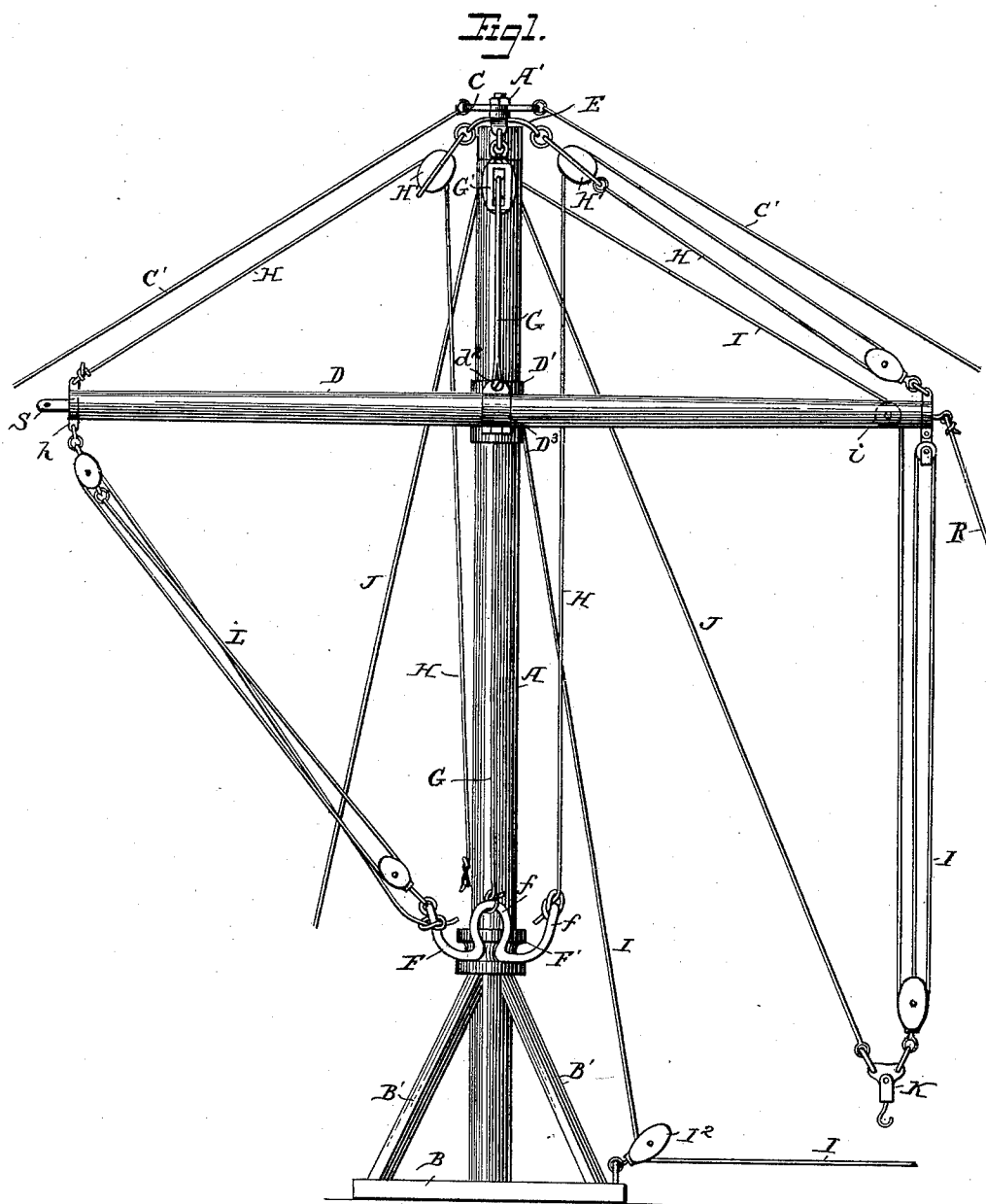
(No Model.)

2 Sheets—Sheet 1.

D. CROWLEY.
DERRICK.

No. 469,497.

Patented Feb. 23, 1892.



WITNESSES

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INVENTOR

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Fig. 2.

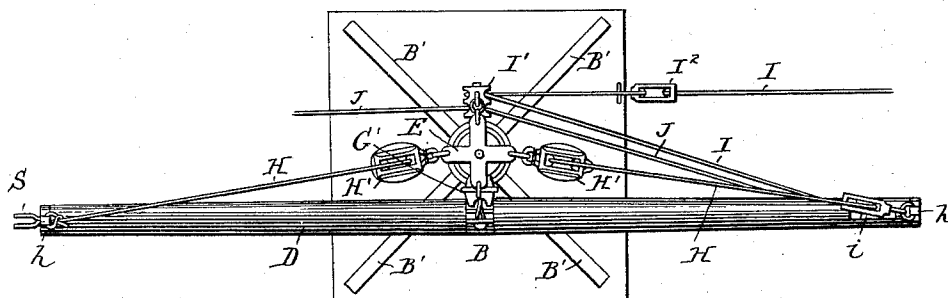


Fig. 3.

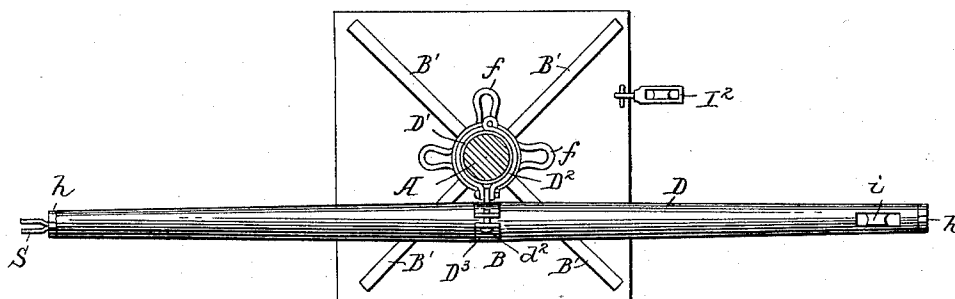


Fig. 4.

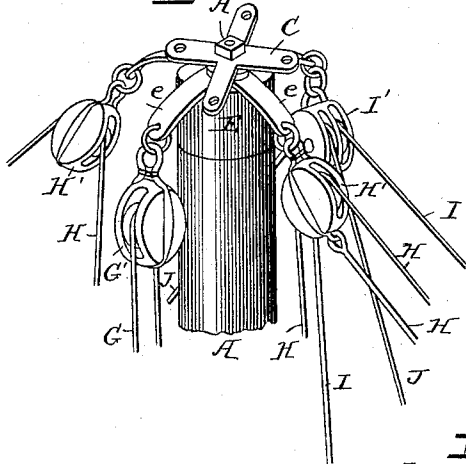


Fig. 5.

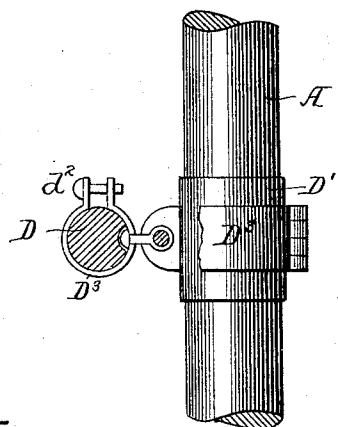
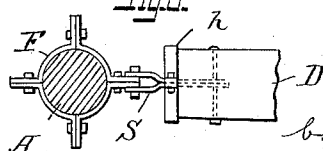


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID CROWLEY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF
ONE-HALF TO CHARLES K. NICHOLS, OF SAME PLACE.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 469,497, dated February 23, 1892.

Application filed September 12, 1891. Serial No. 405,487. (No model.)

To all whom it may concern:

Be it known that I, DAVID CROWLEY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Derricks, of which the following is a specification.

My invention relates to derricks, and more particularly to a derrick which is adapted to be readily movable from place to place and which can be suitably supported and arranged to readily locate or deposit material on all sides of the derrick, and while my improved derrick is adapted to many and various purposes it is especially adapted for building high structures, such as chimneys, monuments, and the like.

With these ends in view my invention consists in a derrick embodying substantially the features of construction and arrangement more particularly pointed out hereinafter.

In the accompanying drawings, Figure 1 is a side view showing the preferred embodiment of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a sectional plan view. Fig. 4 is an enlarged perspective view showing one arrangement of the top of the mast and its attachments. Fig. 5 is a similar enlarged view showing one means of connecting the yard to the mast. Fig. 6 is a detail.

In carrying out my invention I provide a suitable support or mast A, and this is preferably secured to foundation sills or plates B, which may be in the form of a plate, block, or cross-arms, or any other suitable supporting or anchoring materials, and preferably provided with braces B'. This base may be loaded with stones or otherwise secured in a manner well-known to those skilled in the art, and in many instances I find such a support is sufficient. When, however, the derrick is to be used in raising and placing heavy materials, I prefer to attach to its upper end a guide-plate C, which is swiveled or pivotally attached to a suitable bearing A' in the end of the mast and leading from the guide-plate of the guys C', which are suitably secured in the usual manner to the proper attaching devices.

Suitably connected to the mast is the yard

D, and this is pivotally connected so that it can swing in a vertical plane on the axis of the pivot, and also connected to the mast so that it can swing around the mast in a horizontal plane. While these connections may be made in various ways, I have shown a sleeve D' embracing the mast A and arranged to slide freely vertically up and down the mast as well as to rotate around the mast. Connected to this sleeve is a split ring D², the free ends of which are held together by a suitable bolt d, and between the bent free ends of the ring is secured on the bolt d a swivel-pin d', the bolt passing through the eye of the swivel-pin. This swivel is loosely connected to the split band or ring D², which is made to embrace the yard D, the securing-bolt d² serving to clamp the ring around the yard as well as to receive the eye of the halyard by means of which the yard is raised in a manner hereinafter described.

While I have thus described split rings formed in two parts hinged together and secured by bolts, so that the parts can be readily adjusted, it is evident that in place of these parts I could use solid rings fitted upon the mast and yard; but I find the split rings superior, in that they allow the yard to be securely clamped between the parts of the ring, or they may be fitted loosely thereon to allow the yard to slide freely through the ring.

Mounted upon the top of the mast and upon the pivotal bearing A' is the hoisting and supporting plate or swivel E, having a number of depending arms e, to which arms the various tackle-blocks are connected.

Secured to the lower portion of the mast is a swivel-block or traveler F, having arms or eyes f extending laterally and upwardly therefrom, to which the various ropes and tackle can be connected in a manner hereinafter described. This swivel is secured in position on the mast so that it can move vertically, but is free to rotate, it fitting in a recessed portion of the mast, or it may be provided with a ring F', which is permanently secured to the mast and furnishes a bearing for the swivel-plate F.

Connected to the sliding sleeve D', to which the yard D is attached, are the halyards G,

passing over a block G', with the free ends secured to one of the links or eyes *f* of the swivel-block F. By this means the yard can be elevated to any desired position on the mast and secured in this position.

Connected to each end of the yard by suitable metal bands *h*, applied thereto in the usual way, are the top-mast lifts H, passing over the blocks H', secured to the opposite eyes or arms of the supporting-plate E, the ends of the lifts being secured to the eyes or arms *f* of the traveler F. By this means the yard can be adjusted in any desired position instead of being supported by the top-mast lifts in the manner described, while the free ends are connected to the traveler.

Connected to one of the arms of the yard is a hoisting tackle and blocks I, the tackle preferably passing over a guide-pulley *i* at or near the end of the yard and thence through the hoisting-tackle and runner-block I', secured to one of the arms of the hoisting and supporting plate E, and thence passing down over a guide pulley or block I² to the hoisting means, which may be of any suitable or usual construction. The runner J may be attached to the hoisting-hook K, connected to the hoisting-tackle block in any suitable way, and thence passes up and through the hoisting-tackle and runner-block I' and down within reach of the workman, and by this means the hoisting-tackle may be directed so as to deposit the material in the desired position.

Connected to the other end of the yard D is a counteracting tackle L, one block of which is secured to the ring *h* on the end of the yard, while the other block and tackle are secured to one of the arms or eyes *f* of the traveler F. By means of this counteracting tackle the yard can be brought so that the weight of the material being hoisted by the hoisting-tackle is distributed throughout the mast and yard, the counteracting tackle and the top-mast lifts and halyard, together with the mast and yard, forming a practically rigid structure to support the hoisting-tackle.

It will be seen that by my arrangement the traveler, the yard, and the supporting-block are all pivotally mounted on the mast, and the lifts and tackle and halyards are all connected and secured to the traveler, so that when the material is hoisted by the hoisting-tackle the yard and its connections are free to rotate around the mast to deposit the material at any point within the radius of the arm, the runner being used when desired to deposit the material in radial lines of the mast. Instead of using the runner, however, when the material is supported by the hoisting-tackle by means of the top-mast lifts and counteracting tackle, one lift can be eased off while the other is drawn in, and the counteracting tackle is also drawn in, so that the yard can be inclined to an angle with reference to the mast and the material thus deposited in any desired position; but this requires a bodily lifting of the material by means of the top-

mast lifts and counteracting tackle and is generally not so satisfactory and convenient an arrangement as the first-mentioned.

While I have illustrated for the purposes of clearness the blocks provided with single whips, it is evident that I may use two or three or any number of whips in the block, depending upon the nature of the material to be raised, the principles of my invention being precisely the same regardless of the number of whips.

The yard D is provided with a hand-rope R, connected to one end, which may be used in swinging and guiding the yard to the desired position. The yard may be used as an ordinary boom by inserting into its end an eye-bolt S, by means of which it can be connected to the traveler F, and it is then preferred to use a traveler made in four sections, the ends of which sections are bent outwardly and secured by bolts, as shown in Fig. 6.

From the above construction it will be seen that I provide a derrick which is simple in arrangement and yet strong and effective in operation and in which the weight of the material is evenly distributed and by means of which the material can be located at any desired point within the radius of the yard, as the yard and its attached tackle all rotate together freely around the mast.

In some instances in light work I find it is not necessary to support the yard by the halyards, as the top-mast lifts and counteracting tackle are sufficient; but in heavy work I find it an advantage to use the halyards connected to the sliding sleeve of the yard.

What I claim is—

1. A derrick comprising a mast, a sleeve sliding on the mast, a yard connected to the sleeve, a pivoted supporting-plate mounted on the mast, and a traveler also mounted on the mast, and lifting and staying tackle for the yard connected to the plate and traveler, whereby the mast may be adjusted and rotated to any desired position, substantially as described.

2. A derrick consisting of a mast having a pivotal supporting-plate at its top, a sleeve sliding on the mast, a yard pivotally connected to the sleeve, a traveler mounted on the mast, and top-mast lifts connecting the ends of the yard to the plate and secured to the traveler, substantially as described.

3. In a derrick, the combination, with the mast, the sleeve sliding thereon, and the yard pivotally connected to the sleeve, of the pivotal supporting-plate mounted on the mast, a traveler secured to the mast, the top-mast lifts connected to the ends of the yard, and the counteracting tackle connecting one end of the yard with the traveler, whereby the mast may be supported in position and the lifts and tackle may rotate around the mast, substantially as described.

4. In a derrick, the combination, with the mast, the sleeve thereon, and yard connected to the sleeve, of a pivotal supporting-plate

mounted on the mast and having radiating arms, and a traveler mounted on the mast, also having arms, the yard-block, the top-mast-lift blocks, and the hoisting-block being connected to the supporting-plate, and the halyards, top-mast lifts, and counteracting tackle being connected to the traveler, substantially as described.

5. In a derrick, the combination, with the mast, a sleeve thereon, and the yard pivotally connected to the sleeve, of the supporting-plate on top of the mast and the traveler secured to the mast, hoisting-tackle and runner-block secured to one of the arms of the supporting-plate, the top-mast-lift blocks to

other arms, and the halyard-block to the other arm, and a counteracting tackle secured to the traveler, the halyard and top-mast lifts being also connected to the traveler, the whole being arranged so that when the material is supported by the hoisting-tackle the yard and its connections may be freely rotated around the mast, substantially as described.

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

DAVID CROWLEY.

Witnesses:

F. L. FREEMAN,
J. S. BARKER.