

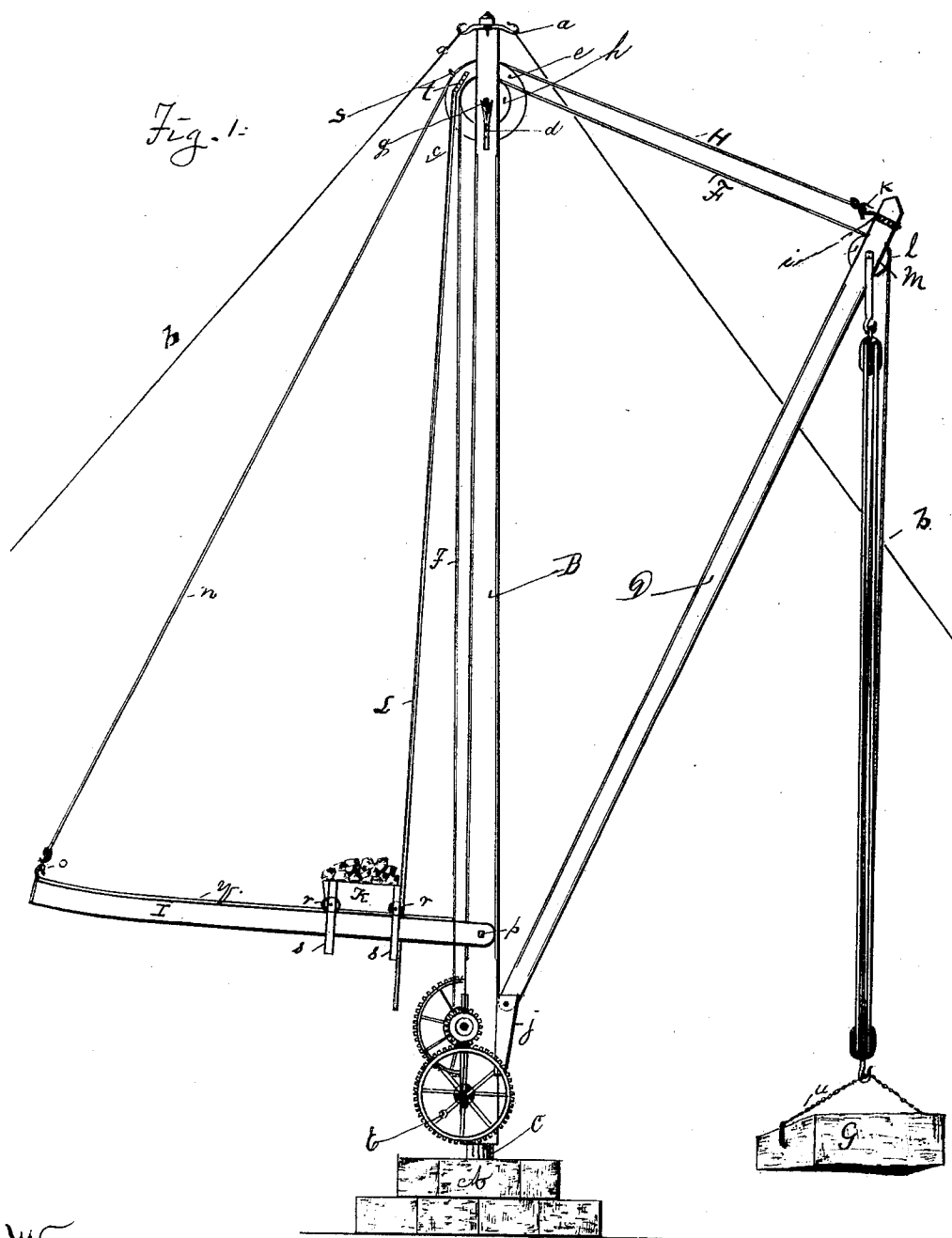
(No Model.)

2 Sheets—Sheet 1.

J. O. BROWN.
DERRICK.

No. 414,284.

Patented Nov. 5, 1889.



Witness
J. L. Beaman
C. T. Clark

In witness
John Ollig Brown
by his atty
H. J. England.

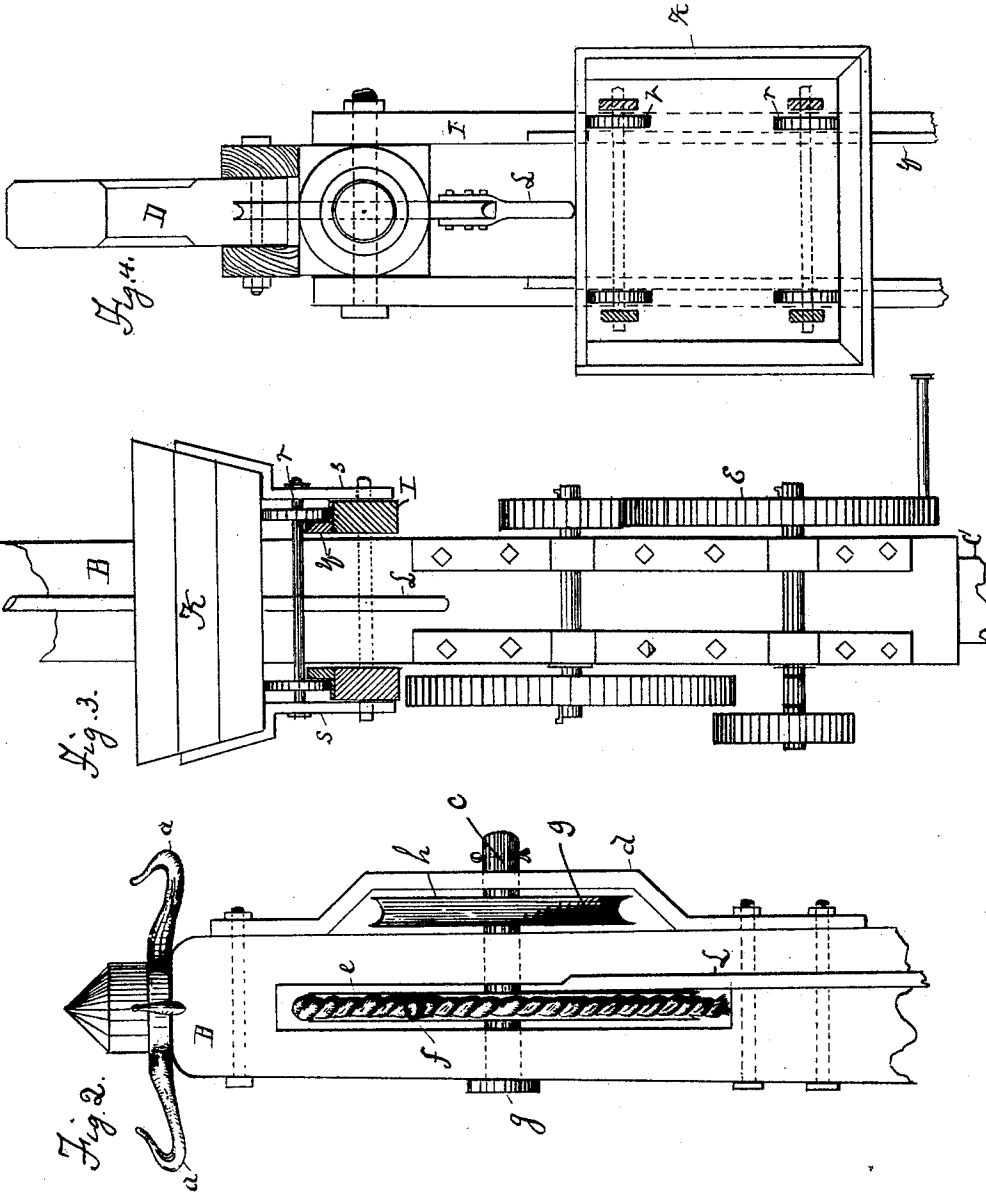
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H. J. England

UNITED STATES PATENT OFFICE.

JOHN OELLIG BROWN, OF CONCORD, TENNESSEE.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 414,284, dated November 5, 1889.

Application filed June 8, 1889. Serial No. 313,537. (No model.)

To all whom it may concern:

Be it known that I, JOHN OELLIG BROWN, a citizen of the United States, residing at Concord, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Derricks; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in hoisting-derricks; and it consists in a mast with pulleys, tackle, and booms, one having a weighted car and rope-winding devices, the whole arranged and operated as hereinafter described and claimed, the object of my invention being to counterbalance the weight to be lifted with a derrick by a boom swung against the mast in opposite direction from the boom on which the weight is lifted. I attain this object by means of the peculiar construction and arrangement of the various parts of my device, which will be more fully described and set forth in the specification and claims, reference being had to the drawings accompanying this application and forming part of the same, in which—

Figure 1 is a side elevation view of my invention, showing the mast and both booms in place. Fig. 2 is a side elevation view, partly in section, of top of mast. Fig. 3 is an end elevation view, partly in section, of crab, boom, mast, and car. Fig. 4 is a plan view, partly in section.

Similar letters refer to like parts throughout the drawings.

Referring to the drawings, A represents the foundation, which may be formed of stone, wood, or any other suitable material.

B represents the upright mast, which may be stepped into block A or pivoted by spindle C, or secured in any other suitable manner, the purpose being that the mast B shall stand upright.

The extreme outer end of mast B is provided with hooks or rings *a*, to which one end of guy-ropes *b* are secured, the opposite end

of said guy or stay ropes *b* being secured to posts or other suitable material at a proper distance from the base of said mast B to hold the same in position. A short distance from the outer end of said mast B a shaft *c* is journaled. One end of said shaft *c* projects outwardly and is journaled in a suitable bracket-bearing *d*, said shaft being held in a horizontal position, and its center is provided with a loose pulley *e*, having a grooved periphery *f*. A smaller pulley *g*, having a grooved periphery *h*, is loosely held on shaft *c* on one side of pulley *e*, over which the hoisting-rope F passes, the inner end of which is secured to the crab-shaft or winding-drum E in the usual manner.

An inclined swinging boom D is loosely held by its inner end to mast B near the base by strap-band, or pivoted in pocket *j*, the purpose being to permit boom D to move freely at any inclination. The outer end of said boom D is provided with a band *i*, that has a hook or ring *k*, rigidly secured thereto, and the extreme outer end is provided with a grooved pulley *l*, that is loosely held in place by shaft *m*. By this construction the hoisting-rope F passes over pulley *g* and pulley *l* to the weight G, that is moved by winding the drum or crab E. A stay rope or chain H is secured at one end to hook *k*, and its opposite end is secured to wheel *e* by means of a staple S, said staple S being placed on the opposite side of wheel *e* from boom D. Staple S also secures one end of stay-rope *n*, and the opposite end of said rope is secured to hook *o* at the outer end of swing-boom I, the inner end of said boom being pivoted to mast B by pivot-bolt *p*. The upper face of said boom I is provided with rail-tracks *γ*, forming treads for the car-wheels *r*, that are journaled to frame *s* of car K. Frame *s* extends down below the boom I to steady car K and prevent its lateral movement. Car K is adapted to move freely on rails *γ* to the outer end of boom I and back to the mast B. Said car is loaded with stone or other suitable material to counterbalance the weight G that is being lifted, and it is moved outward on boom I by means of the arm L, which is rigidly secured at one end to wheel *e* by means of bolts *t*, its lower or free end passing downward below boom I and resting against the

inner face of car K, whereby, when the outer
end of boom D is drawn downward by weight
G that is being lifted by crab E and rope F,
then rope H pulls wheel *e* over toward boom
5 D, which causes the rod or arm L to move
outward at its lower end and push the car K
outward on the boom I until the weight G is
balanced, when it can be raised to the desired
height by the crab E and rope F and de-
10 posited in the usual manner where desired.
After the weight G is released from the
clamp chains and hooks *u* the outer end of
boom D moves toward the mast B, releasing
the strain on pulley *e*, permitting said pulley
15 to revolve outward, forcing the lower end of
arm L inward, which permits the car K to
run inward to the mast B to its normal con-
dition ready for lifting another weight.

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

A derrick consisting of a mast having a
rope-winding device, two pulleys journaled
near the top of the mast, a pivoted boom
having an end pulley and a tackle-block, a 25
rope from said tackle-block passing over the
boom-pulley and one of the mast-pulleys to
the rope-winding device, a second boom piv-
oted to the mast opposite the aforesaid boom,
a rope connected between the other mast-pul- 30
ley and each of the booms, and a vertical
arm secured to the last-mentioned pulley and
adapted to contact with a loaded car mounted
on the second boom, whereby said car may
be moved outward to counterbalance the 35
weight to be raised.

In testimony whereof I affix my signature in
presence of two witnesses.

JOHN OELLIG BROWN.

Witnesses:

WM. ASHMORE,
C. T. SISK.