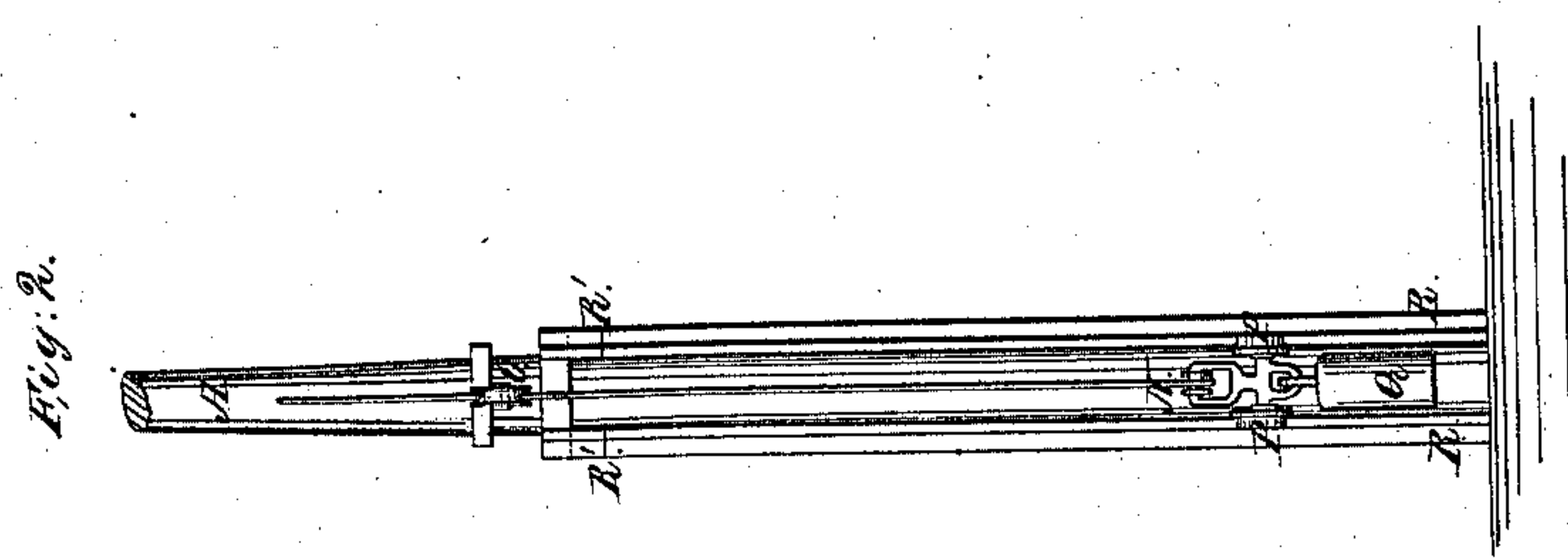
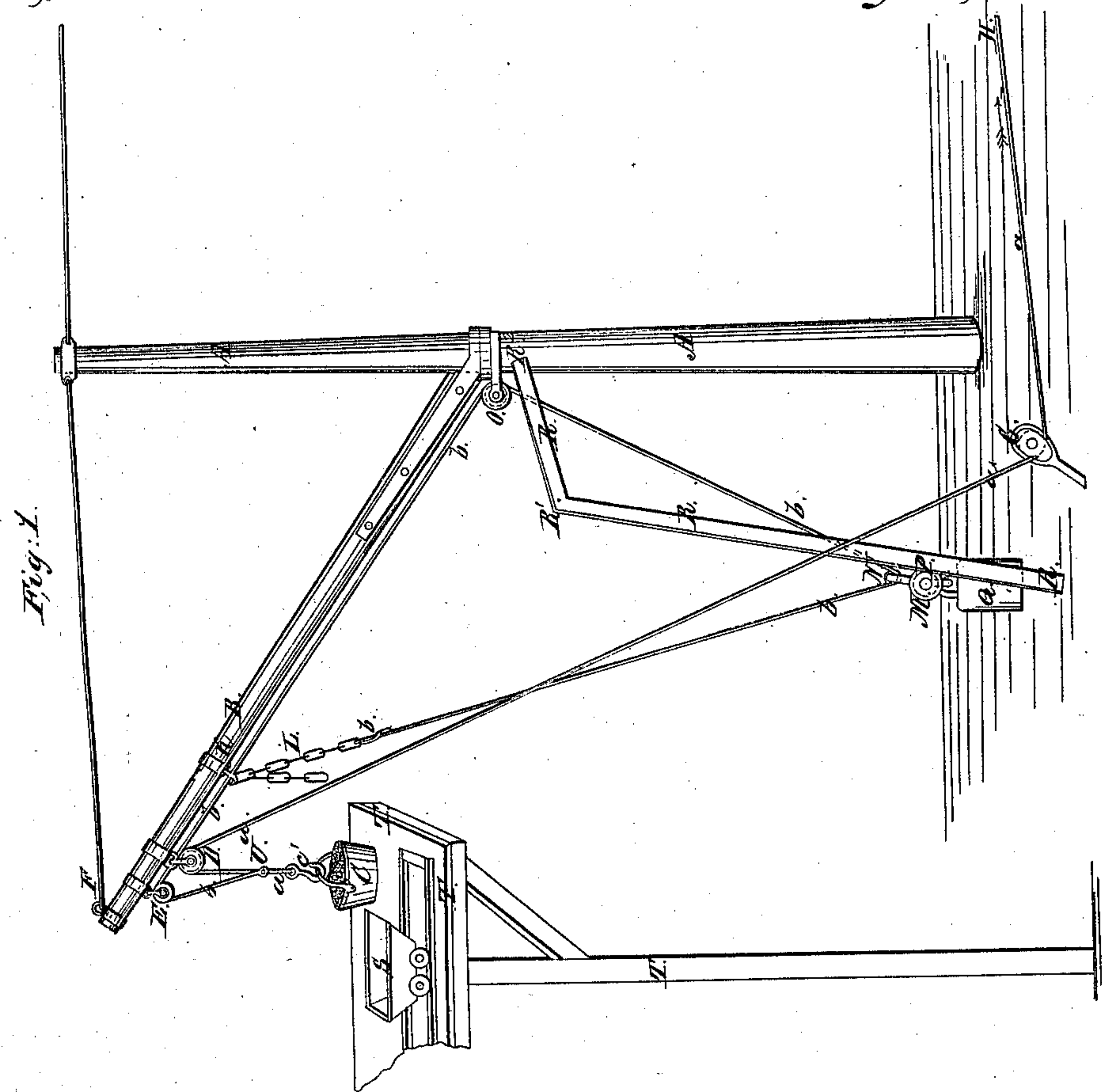


C. S. Lockwood,

Derrick.

N^o 81,385.

Patented Aug. 25, 1868.



Witnesses:
Francis Scott
John M. W. Smith

Inventor:
Charles S. Lockwood

United States Patent Office.

CHARLES S. LOCKWOOD, OF NEWBURG, NEW YORK.

Letters Patent No. 81,385, dated August 25, 1868.

IMPROVEMENT IN DERRICK.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES S. LOCKWOOD, of Newburg, in the county of Orange, and State of New York, have invented a new and useful Mode of Balancing the Weight of the Bucket on Derricks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, and to the letters of reference marked thereon.

The nature of my invention consists of attaching to the rope or chain, by which the bucket is pulled up for hoisting substances, another rope or chain, and to this a weight, in such a way that this weight is moving down when the bucket, laden with its freight, is pulled up, in this way helping to lift the bucket, and the weight is moving up when the empty bucket is lowered down again. It will be seen that the bucket can only be balanced to such a degree that a sufficient weight is left on the side of the bucket for it to go down by its own weight, with sufficient velocity to overcome the friction in the different blocks and falls used for the transportation of rope or chain in their different directions.

The counter-weight is attached to an axle with two wheels, which roll on a nearly vertical plane. This plane, near its upper terminus, is broken to a nearly horizontal plane, on which these wheels are moving when the bucket is down. In this way the rope, to which the counter-weight is attached, is slackened, and does not pull so strong on the rope with the bucket, enabling the empty bucket to be unhooked, and another full bucket to be attached to the hook on the rope.

When the bucket is up, the weight is down, and may rest on the ground or hang suspended on the rope, as in most cases the bucket need not be unhooked, but only emptied into a wheel-barrow or car, or some other vessel ready to receive the freight. It is necessary to have the rope, which keeps the balance-weight, adjustable in length, in case the derrick is used for unloading a vessel or boat, which is exposed to high or low water during unloading, as the weight is to come on the upper plane at the moment the empty bucket comes to the ground or on the bottom, to enable the attending person to unhook the empty bucket.

The benefit of working or unloading a boat or vessel with balanced bucket is apparent. Suppose the weight of the bucket to be two hundred pounds, which is a low estimate, one hundred and fifty pounds, at least, could be balanced, as fifty pounds will be sufficient to pull the bucket down with sufficient velocity. These one hundred and fifty pounds could be taken off from the horse, who has to pull the bucket up, making, for about seven hundred times per day, fifty-two tons, or an equal amount of freight could be hoisted up each time, making fifty-two tons' weight per day more hoisted up by the same power as before without balanced bucket.

Figure 1 shows a derrick in operation, with the bucket up.

A A is the mast, B the gib, C the bucket, C' the hook, and *a a a* the rope by which the bucket is pulled up, going over the different rollers D and G, the pulling power being attached at H.

At U, above the hook C', is attached the rope *b b b*, leading over the rollers E O N, and is fastened on a hook, K, on the gib, where its length can be regulated by hooking any one of the links of the chain over the hook K, on the gib.

This regulating may be done by any other convenient means, amounting to the same, to the shortening or lengthening of the rope, to which the counter-weight Q is attached.

Q is the counter-weight on the axle M, with rollers P P. These rollers move up and down on the ways R R R, the upper ends of which, R¹ R², run nearly horizontal, and rest on the mast, about one foot below the lower end of the gib B.

By this arrangement of suspending the weight on a fall, the way of the weight Q is only one-half of the bucket. It must therefore be double as heavy to counterbalance the necessary weight to be balanced. If the bucket is two hundred pounds, and fifty pounds necessary to move down the bucket, the counterbalance must be three hundred pounds.

T T show a platform, with rails, and a truck or car on it, to receive the hoisted-up freight. L L show a

piece of chain attached to the rope *b b*, which serves to adjust the length of rope for the counter-weight for high or low water, or for a full and empty or nearly empty vessel.

What I claim as my invention, and desire to secure by Letters Patent, is—

The counter-weight to balance the bucket on a derrick, in the way as shown and described, and for the purpose as specified.

CHARLES S. LOCKWOOD.

Witnesses:

JAS. H. YOUNG,
FRANCIS SCOTT.