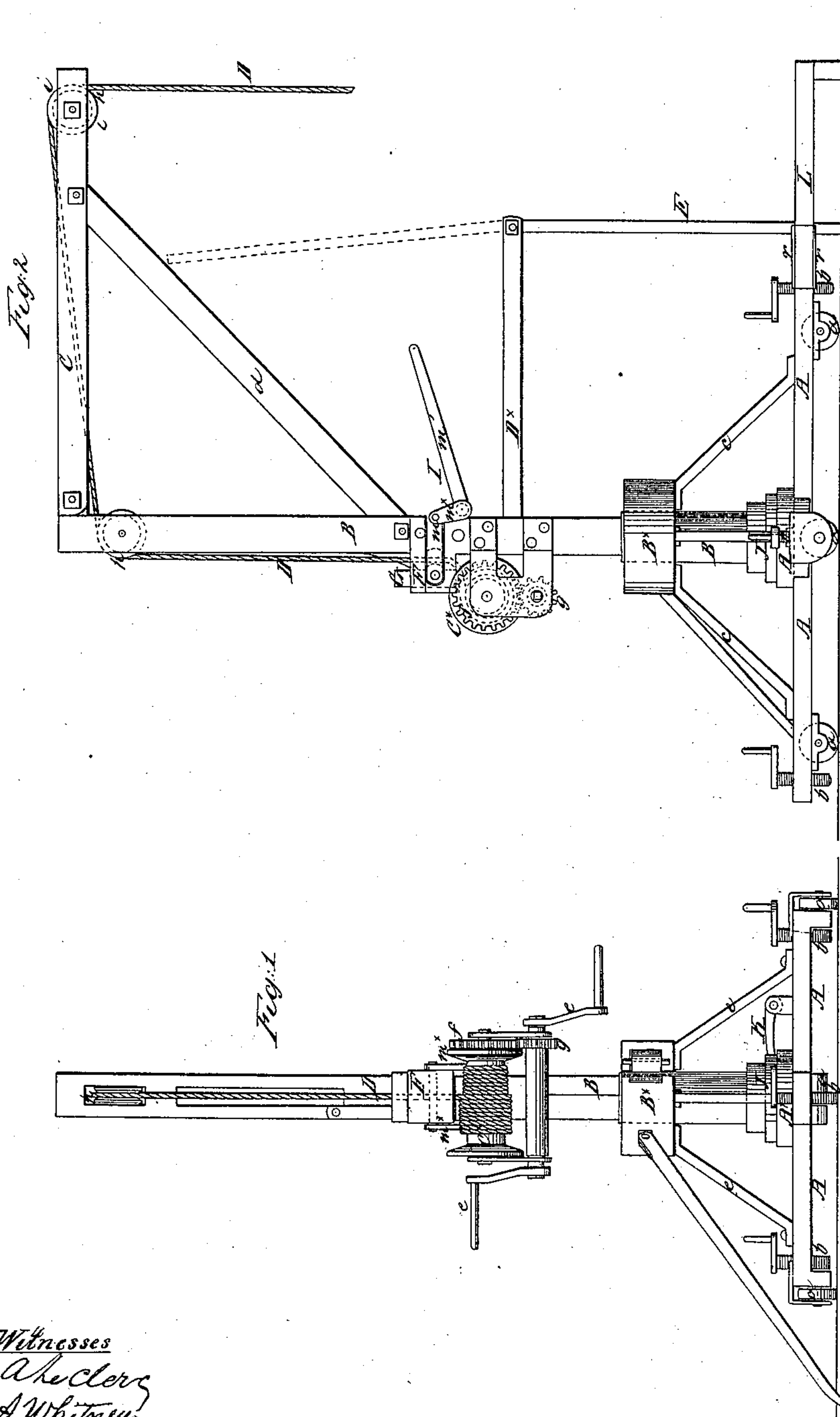


C. Williams.

Derrick.

No 81,317.

Patented Aug 18, 1868.



Witnesses
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C. WILLIAMS, OF NEW YORK, N. Y.

IMPROVEMENT IN CRANES.

Specification forming part of Letters Patent No. 81,317, dated August 18, 1868.

To all whom it may concern:

Be it known that I, C. WILLIAMS, of the city, county, and State of New York, have invented certain new and useful Improvements in Cranes; and I do hereby declare that the following is a description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a side view of a crane constructed according to my invention. Fig. 2 is a side view of the same at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a clamping-brake so arranged upon the crane and in such relation with the lifting-rope that the said rope may be firmly held to retain the load at any desired height, irrespective of the devices employed to operate the rope aforesaid.

The invention further consists in a brace of novel construction, so applied to the standard as to materially strengthen the same against the strain exerted thereon when the apparatus is in use.

The invention further consists in a foot-piece so combined with the base of the crane that when the crane is employed for raising unusual or excessive weights any tilting or oversetting of the same may be effectually provided against.

The invention further consists in a novel means whereby the crane may be temporarily held in a fixed position when required—as, for instance, during the operation of elevating a weight previous to moving the same horizontally with the crane.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

The base of the crane is shown at A, and may be formed of four radial planks or beams secured to a center-piece, A*, and furnished, at their outer ends, with small wheels *a*, which enable the apparatus to be conveniently moved, and also with strong vertical screws *b*, designed to enable the base to be adjusted in a nearly or quite horizontal position upon uneven ground, in order that the crane itself

may be brought into the necessary vertical position when in use.

Supported upon suitable braces *c*, over and at any appropriate distance from the center-piece A*, is a strong annular block, B*, through which is passed the cylindrical lower portion of the standard B of the crane, the lower extremity of the said standard fitting into a suitable step provided centrally in the center-piece A*. The upper end of the standard B is of course furnished, at its upper end, with a horizontal arm, C, which should be strengthened by an oblique supporting-brace, *d*, the crane being capable of being turned, when desired, around the axis of the standard B.

Situated at the back or outer side of the standard is a drum, C*, which is rotated by means of cranks *e*, through the agency of spur-wheels *f g*, and which has attached to it the draft or lifting rope D, which passes up over a pulley, *h*, at the top of the standard, thence over a similar pulley, *i*, at the outer extremity of the arm C, and thence downward to the weight or material to be raised, the said weight being elevated by winding the lifting-rope on the drum aforesaid.

Attached to the standard B, but made detachable therefrom, and in a position parallel with the arm C, is a horizontal bar, D*, to the outer end of which is pivoted a post, E, which, when placed with its lower end upon the ground, enables the brace formed by the said bar D* and post E to support the standard against the lateral strain exerted thereon by the operation of raising the weight. When it is desired to turn the crane, as hereinbefore mentioned, the post E may be swung upward into the position shown in outline in Fig. 2; but when the apparatus is employed for elevating bodies of comparatively moderate weight, the brace may be wholly removed from the crane.

Secured to the back or outer side of the standard B, above the drum C*, and passing around the lifting-rope D, is a frame, F, in which is placed a sliding brake, G, connected by straps or links *m* with the short arms *m** of a forked bell-cranked lever, I, in such a manner that, by pressing downward the long arm *m'* of the lever, the brake will be brought

against the rope, and, by griping or compressing the same against the standard, will firmly hold the same to sustain the weight or load at any desired height, irrespective of the drum C* and its appurtenances, as required, for instance, in moving the said weight or load laterally or horizontally by the turning movement of the crane around the axis of its standard, as hereinbefore mentioned.

Attached upon the lower part of the standard B, and made adjustable thereon by means of a suitable set-screw, is a collar, J, in one side of which is a vertical notch; and pivoted upon the base A, or its center-piece, is a strong pawl, K. When it is required to retain the crane in a fixed position, as in simply raising the weight or load, the end of the aforesaid pawl is fitted into the notch of the collar fixed upon the standard, thereby securing the desired stability of the crane; and when it is required to move or swing the weight horizontally by turning the crane, the pawl is thrown out from the aforesaid notch, thus permitting the said crane to be turned as required.

L shows a foot-piece, formed of a plank or beam corresponding in size to those of which the base A is formed, and which is provided at one end with a tubular or hollow socket, r, which, being fitted upon the end of one of the

radial planks of the base, constitutes a continuation of the same, so that the said plank, from its increased length, when placed in a position parallel or underneath the arm of the crane, effectually prevents the crane from tilting over when used for raising excessive weights, as might otherwise occur.

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

1. The clamping-brake, arranged with reference to the crane and the lifting-rope thereof, substantially as and for the purpose specified.

2. The brace constructed with the swinging post E, in combination with the standard B of the frame, substantially as and for the purpose specified.

3. The detachable foot-piece L, in combination with the base A of the crane, substantially as and for the purpose specified.

4. The pawl K, arranged in relation with the notched collar of the turning standard B, substantially as and for the purpose specified.

5. The collar B*, and its sustaining-braces c, in combination with the turning standard B and the base A, substantially as and for the purpose specified.

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Witnesses:

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