



(No Model.)

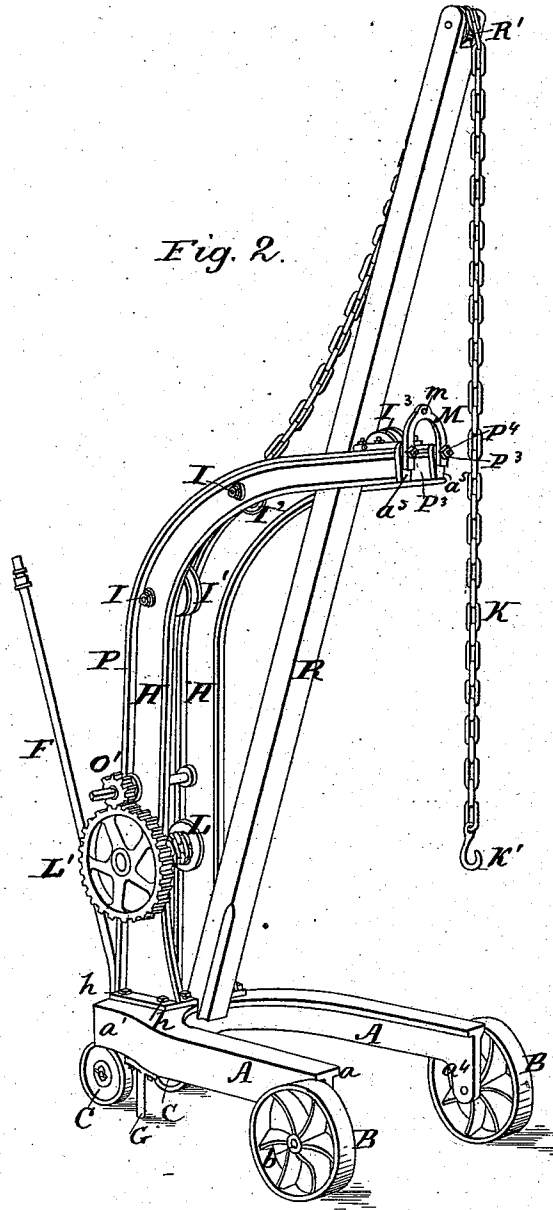
2 Sheets—Sheet 2.

D. T. LANE.

CRANE.

No. 381,256.

Patented Apr. 17, 1888.



Witnesses  
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# UNITED STATES PATENT OFFICE.

DAVID TENNY LANE, OF FRANKLIN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO D. I. DALE, OF SAME PLACE.

## CRANE.

SPECIFICATION forming part of Letters Patent No. 381,256, dated April 17, 1888.

Application filed September 22, 1887. Serial No. 250,394. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID TENNY LANE, a citizen of the United States of America, residing in the city of Franklin, in the county of Venango and the State of Pennsylvania, have invented certain new and useful Improvements in Cranes and Derricks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in a traveling or truck crane adapted to be moved from place to place, either to receive or deliver a load.

The objects of my invention are mainly to provide a crane which may be moved from place to place and placed directly over the object to be elevated, which will possess strength, lightness, and compactness, which may be readily turned within a limited space, and be either supported to move freely upon the wheels of the truck or be made firm and immoveable when required.

The improvements consist in certain constructions and combinations of parts, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective of my improved crane adapted for ordinary uses. Fig. 2 is a perspective view of the crane provided with a beam supported therein and extending above the arm of the crane; and Fig. 3 is a detail in elevation of two of the truck-wheels, their axle, and king-bolt for supporting the rear end of the truck.

The bed-plate of the derrick or crane is cast in a single U-shaped piece having an inwardly-projecting flange, *a*, upon its upper side, and a rear extension, *a'*, from which lugs *a<sup>2</sup>* and a bearing, *a<sup>3</sup>*, project to retain one end of re-enforcing-straps and the king-bolt. The bed-plate has also bearing-lugs *a<sup>4</sup>* projecting downwardly from its forward end to receive the axle of the front wheels.

The forward wheels, B B, of the truck revolve upon fixed stud-axes *b*, projecting outwardly from the lugs *a<sup>4</sup>*, and the rear wheels, C C, are journaled upon the curved or crank axle D, the central portion of which has a journal, *e*, that is received by the lower end of a king-bolt, E, the upper end or spindle, *e'*, of which turns freely in the bearing *a<sup>3</sup>*, projecting from the rear end of the truck-frame.

A handle, F, forked at its lower end, is secured to the crank-axle D, and may be raised or lowered to depress or elevate the rear end of the truck-frame A. Legs G are bolted to the under side of the rear end of said frame to support the same when the frame is lowered by raising the handle. The truck is then firmly supported or held in a fixed position upon its legs when the handle is in its raised position, and the latter is thus out of the way when not in use.

The arms H H of the crane have their upper ends curved, and consist of castings of corresponding shape, preferably T-shaped in cross-section, and firmly secured by bolts *h* at their lower ends to the bed-plate A of the truck and held opposite each other a suitable distance apart by tie-bolts I, which also serve to support sheave-pulleys I<sup>1</sup> I<sup>2</sup>, placed between the arms H H to revolve freely upon the tie-bolts and conduct the chain K of the crane from a drum, L, supported in bearings upon the lower portion of the arms H. A sheave-pulley, I<sup>3</sup>, is supported upon a shaft having bearings *i*, fixed to the upper side of the forward end of said arms.

A U-shaped plate, M, is bolted to the front end of the arms H and serves to securely brace and connect said arms. Said plate has a hole, *m*, to receive the hook K' at one end of the chain K when said chain is to be used in connection with a snatch-block.

The snatch-block N and pulley N' (shown in Fig. 1) are supported in the loop K<sup>2</sup> of the chain, one end of which is secured by the hook K' to the plate M, as above described, and the other portion of which passes over the sheave-pulleys I<sup>3</sup>, I<sup>2</sup>, and I<sup>1</sup> to the drum L of the windlass, to which one end is secured. A spur gear-wheel, L', is secured to the axle of the drum, and a pinion-shaft, O, supported in bearings in the arms H, is fitted at one end with a gear-pinion, O', which engages with the spur-gear L' and at its other end with a ratchet-wheel, O<sup>2</sup>, which is held by a pawl, O<sup>3</sup>, to permit the revolutions of said shaft against the weight of the load supported by the chain. A handle, O<sup>4</sup>, is also secured to one end of the shaft O, to revolve the shaft O and drum L to raise and lower the load in a well-known manner.

The arms H are re-enforced by wrought-

iron or steel straps P P, which rest with their front sides upon the outer flange of said arms, and are secured at their lower ends by screw-threaded bolts P', welded upon their lower ends, which pass through the lugs  $a^2$  upon the bed-plate A of the crane, and are secured thereto by nuts  $p^2$ . The upper end of the straps have similar screw-threaded bolts,  $p^3$ , which pass through lugs  $a^3$  at the upper end of the arms H and through the plate M at said ends, and are drawn tight and held therein by nuts  $p^4$ .

When it is required to raise the load to a greater height than can be obtained with the arrangement of lifting-tackle above described, a beam, R, having a sheave-pulley, R', supported in bearings at the upper end thereof, is placed in a slightly-inclined position between the arms H of the crane to project above and slightly forward of the upper ends of said arms. The lower end of the beam R rests upon and is supported by the inner flanged edge of the U-shaped bed-plate A, and is also supported at its upper end between the arms H upon the sheave-pulley R'. When the handle F of the truck is drawn down to a nearly horizontal position, the crank-axle of the truck will lift the rear end of the bed-frame free from its support upon its legs G and push the wheels C beneath the frame to admit of their being easily turned in any direction to move the crane from place to place, or to turn the arms and bed-plate around in any position to face the object to be lifted or place it in any required position. The U-shaped bed-plate, open at its forward end, will generally encompass the load and permit the crane to be wheeled in close proximity thereto. When the handle F is raised to the position shown in Fig. 1, the rear end of the truck is lowered and allowed to rest upon the legs G, and the latter firmly hold the truck in position while the load is being lifted or deposited.

The derrick or crane herein described is especially adapted for use in a foundry-yard or

machine-shop for handling castings and various parts of machinery and shafting.

Having now fully described my invention, I claim—

1. In a traveling crane, the U-shaped bed-plate having curved arms secured to the rear end thereof, in combination with a lifting-tackle and winding-drum, truck-wheels journaled upon stud-axes fixed to the forward end of the U-shaped bed-plate, and truck-wheels having a crank-axle pivotally connected with the rear end of said bed-plate, substantially as described.

2. In a traveling crane, the bed-plate having arms projecting upwardly therefrom, in combination with the lifting-tackle and winding-drum, truck-wheels journaled upon axes fixed to one end of the bed-plate, a crank-axle and truck-wheels pivoted to the opposite end of said bed-plate, and a handle secured to the crank-axle and adapted to raise or lower and to guide the frame in its movements, substantially as described.

3. In a traveling crane, the bed-plate having arms for supporting the load secured thereto, in combination with a lifting-tackle supported upon the arms, truck-wheels at one end of the bed-plate, a crank-axle swiveled at the other end of the bed-plate, a handle secured to the axle, and legs depending from the frame, substantially as described.

4. In a traveling crane, the combination of the bed-plate and the curved arms projecting upwardly and forwardly therefrom, with a beam carrying a sheave-pulley at its upper end and supported by the bed-plate at its lower end, and held between the upper and forward ends of the curved arms, and a lifting-tackle supported substantially as described.

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

DAVID TENNY LANE.

Witnesses:

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