

(No Model.)

J. H. WHITING.

CRANE.

No. 310,009.

Patented Dec. 30, 1884.

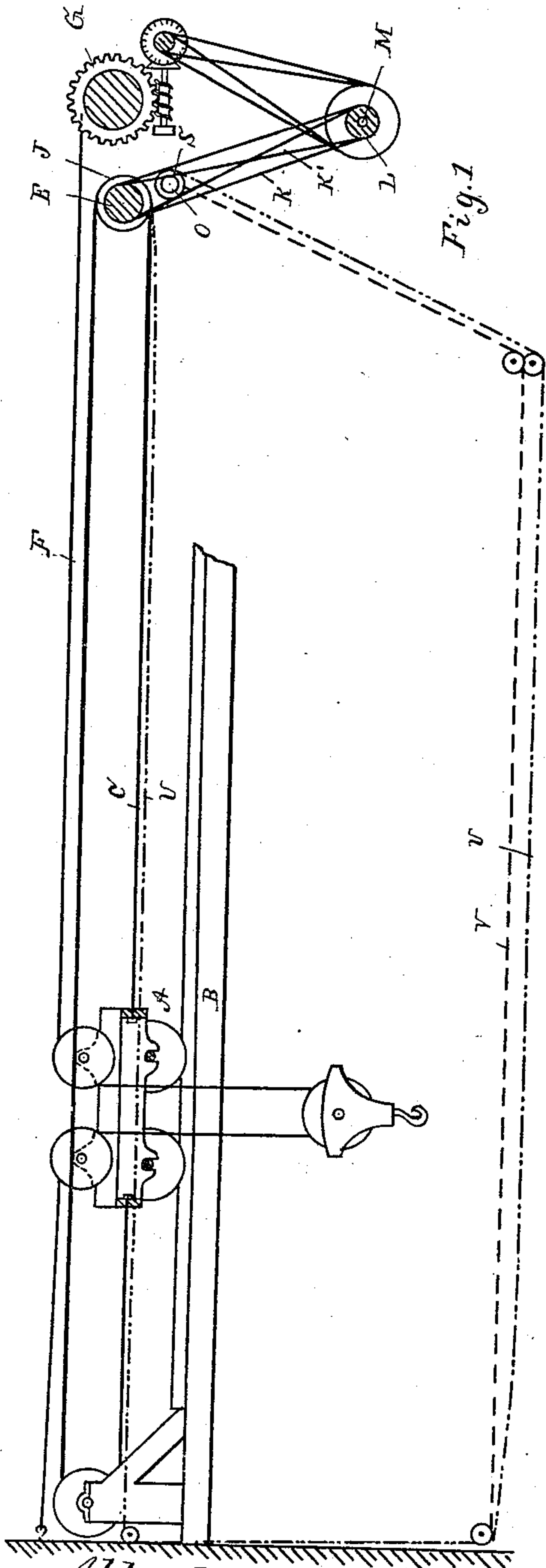


Fig. 1

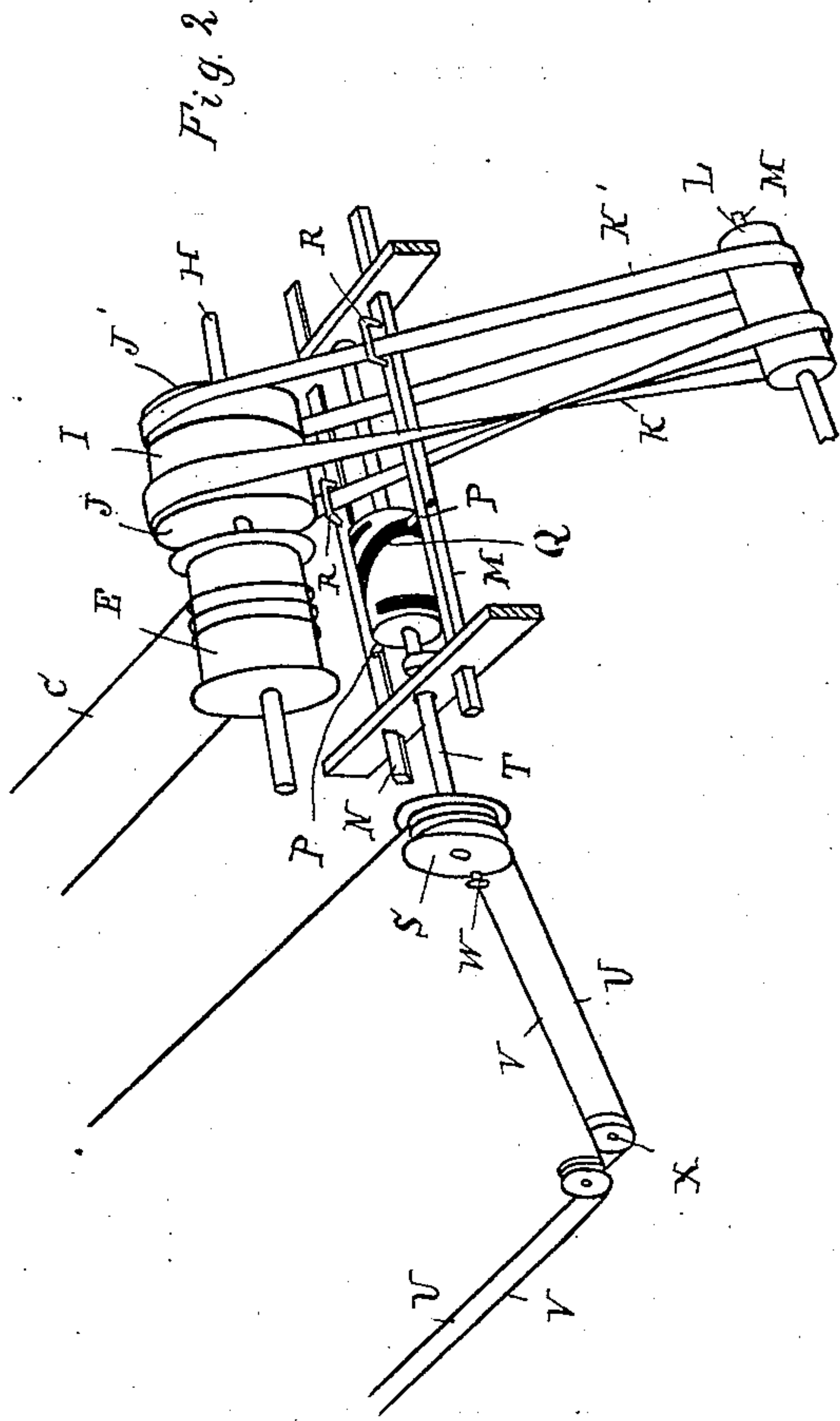


Fig. 2

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UNITED STATES PATENT OFFICE.

J. HILL WHITING, OF DETROIT, MICHIGAN.

CRANE.

SPECIFICATION forming part of Letters Patent No. 310,009, dated December 30, 1884.

Application filed October 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, J. HILL WHITING, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Cranes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to an improvement in traversing cranes, such as are used in foundries and machine-shops; and the improvement consists in the construction and arrangement of the belt-shifting device, by means of which the traversing motion of the crane is controlled from the floor of the foundry.

15 In the drawings which accompany this specification, Figure 1 is a sectional side elevation of the traversing crane, and Fig. 2 is a detached perspective view of the belt-shifting devices for controlling the traversing motion of the truck.

20 A is an overhead traversing truck. B is the elevated track upon which it travels. C is the endless traversing cable. E is the live-drum which operates it. D is the hoisting-hook of the crane. F is the hoisting-cable, and G is the drum which operates the same, all these parts being of well-known construction and operation. The drum E of the traversing cable is fast upon its shaft H, and I is a fast pulley upon the same shaft. J and J' are two loose pulleys upon the same shaft—one on each side of the fast pulley.

35 K is a straight belt, and K' is a crossed belt, both passing over the pulley L of the counter-shaft M, and over the loose pulleys J and J', respectively.

40 By means of the belt-shifting device, hereinafter described, either one of the two belts K K' may be shifted onto the fast pulley I, and thus convey motion either in one direction or in the opposite to the drum E, which controls the movement of the traversing cable.

45 The belt-shifting device consists of the laterally-sliding bars M N, and of the grooved pulley O. Each of the sliding bars M N is provided with a pin or stud, P, which engages into a groove of the pulley O and with the belt-shifting loops R, which engage with the

belts K K', respectively. The grooves Q on the pulley O are so arranged that by turning the latter either one way or the other one of the two sliding bars is laterally displaced and shifts its belt.

55 S is a cable-pulley secured upon the same shaft, T, with the grooved-pulley O. U is the endless starting-cable, which passes around the cable-pulley S, and has its lower branch conducted down near the foundry-floor and alongside the entire track traversed by the truck, so that it may be operated from any place underneath the track. By means of this starting-cable the operator can work the belt-shifter in the desired manner to run his truck backward or forward, or have it stopped at any desired spot.

60 As it is desirable, in practice, to give a good rate of speed to the traversing motion of the truck, it will be seen that the handling of the starting-cable requires great attention and watchfulness to stop the truck with proper precision at any required spot, on account of the difficulty in bringing the grooved pulley O by means of the starting-cable alone in the required position to keep both belts off the fast pulley I. If the operator should have pulled the starting-cable too far in the required direction, there is great liability that the truck, after stoppage, may start up again accidentally, owing to one of the belts K K' being gradually drawn onto the fast pulley.

65 Now, in order to furnish the operator a ready means to stop the truck with desirable precision, and exclude all liability of accidents, I have arranged a separate rope, V, intended exclusively for the purpose of stopping the traversing motion of the truck. This rope V is attached at W to the rim or face of the cable-pulley S, and is conducted down near the foundry-floor, passing around the guide-pulley X, and after running alongside the cable U is attached thereto at its rear end. Now, if the operator pulls the rope V as far as it will go in the direction indicated by the arrow in Fig. 2, he is sure to bring the cable-pulley S into a certain fixed position, and this position I so adjust as to be the one required for having both belts K and K' upon the idlers J and J'.

The belt-shifting devices for operating the hoisting-cable are constructed like the one described for the traversing cable, and the starting-rope is arranged in a similar manner; but in this case there is less necessity for an extra safety-rope to effect the stopping, as the motion of the hoisting-cable is slow, and the belts have no tendency to draw onto the fast pulley after they are shifted onto the idlers.

To better distinguish the safety-rope V from the starting-cables, which are preferably wire cables, I use a hemp rope of greater thickness than the starting-cables, so as to allow the operator to distinguish by sight as well as by touch.

By means of the starting-cables, arranged as herein described, I give the entire control of the crane into the hands of the men who are using it, and can dispense with the services of a boy heretofore required to operate the crane as directed by the men on the foundry-floor.

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

1. In an overhead traversing crane, the combination of an endless starting-cable running alongside the whole length of the track of the carriage, and with one branch in proximity to the foundry-floor, of a cable-pulley over which said endless cable passes and by means of which it may be oscillated, and of a belt-

shifting device operated by the oscillations of the cable-pulley, substantially as and for the purposes described.

2. In an overhead traversing crane, the combination of a safety stopping-cable running alongside the whole length of the track of the carriage and in proximity to the foundry-floor, of a cable-pulley to which said rope is secured, and of a belt-shifting device operated by the oscillations of the cable-pulley, all so arranged that the operation of the cable will positively oscillate the cable-pulley into the required positions for stoppage, substantially as described.

3. In an overhead crane, the combination of an endless starting-cable running the entire distance of the carriage-track, and with its lower stretch brought in proximity to the foundry-floor, of a cable-pulley over which said endless cable passes and by means of which it may be oscillated, of a stopping-cable secured to the cable-pulley and placed alongside the starting-cable, and of a belt-shifting device operated by the oscillations of the cable-pulley, all combined and operating substantially as described.

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Witnesses:

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