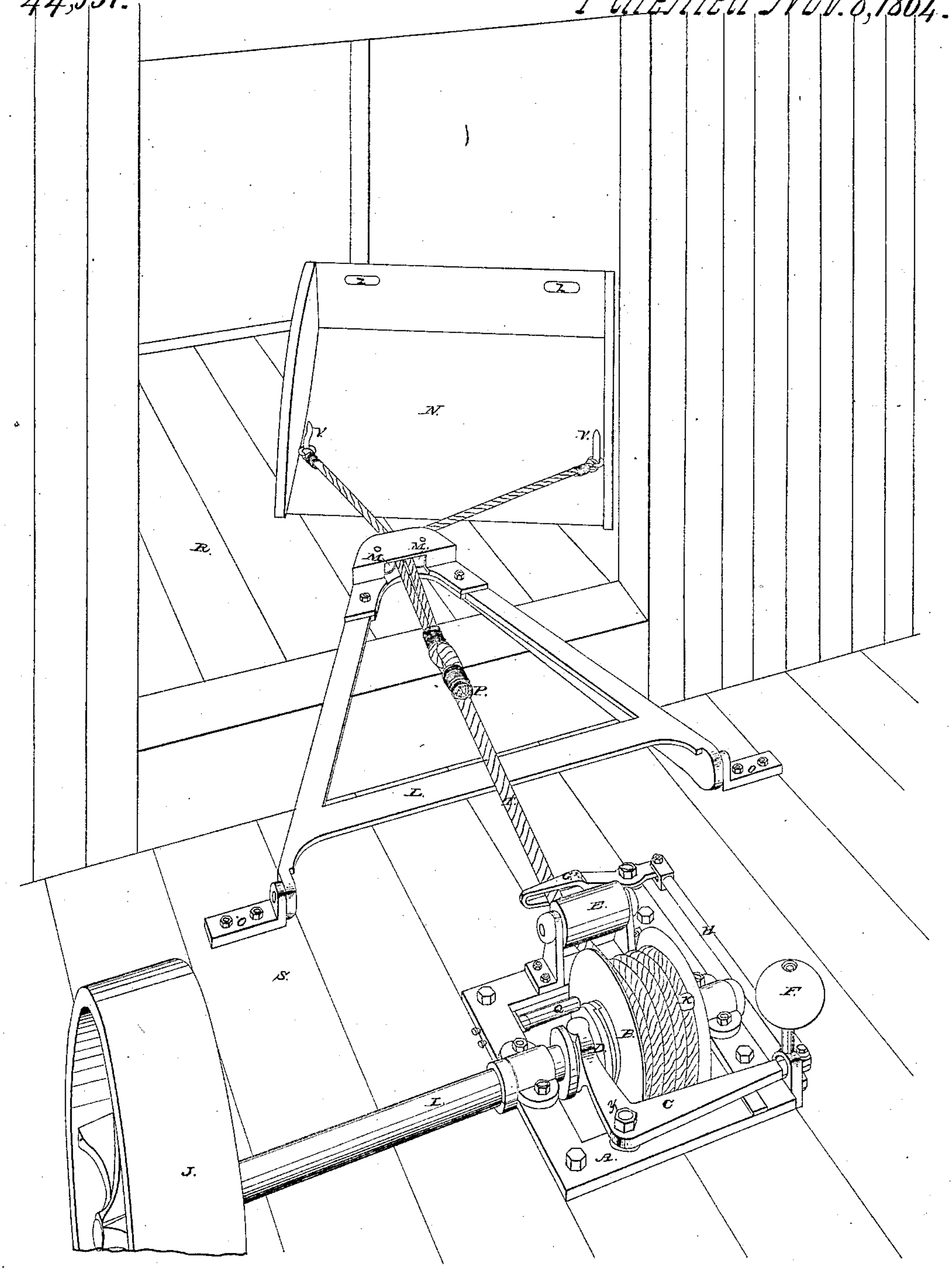
E. M. Clark,

Unloading Grain from Cars.

No. 44,937. Patented Nov. 8, 1864.



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ELIPHALET M. CLARK, OF DETROIT, MICHIGAN.

IMPROVEMENT IN UNLOADING GRAIN FROM CARS.

Specification forming part of Letters Patent No. 44,937, dated November 8, 1864.

To all whom it may concern:

Be it known that I, ELIPHALET M. CLARK, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Machine for Unloading Grain from Cars; and I do hereby declare the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the drawing and model accompanying this specification and making a part thereof, the drawing being in perspective, and the simplicity of the machine requiring no other view.

The nature of my invention consists in the use of a shovel or scraper, or its equivalent, attached by a rope, or its equivalent, to machinery, to work the same outside of the car, for the speedy and economical unloading of grain from the same.

To enable others skilled in mechanics to make and use my invention, I will describe its construction and operation.

S is the floor of the ware-house, and R the floor of the car alongside to discharge its grain.

A is an iron frame secured to the floor S in a substantial manner, and carrying the shaft I, which is driven by the pulley J. Upon the shaft I is the sliding clutch D, controlled by the forked lever C, which is controlled by means of the connecting-rod H, the lever G, and the vibrating ball F. The lever G is provided with a loop, through which the rope T, connecting the machinery with the scraper N, is seen to pass. Upon the rope T there are two fixed collars, P K, which work the clutch D in or out of gear with the loose drum B, as the said collars impinge upon alternate sides of said loop in the lever G in the process of working the machine. The drum B runs loosely upon the shaft I, and to this drum one end of the rope T is firmly attached, while the other end is attached to the scraper N by means of the hooks V V. This rope passes under the friction-roll E to keep it firmly in its proper position in the loop of the lever G, and through the apex of the triangular frame L, where the friction-rollers M M enable the scraper to be carried to and worked freely from either end of the car. The triangular frame L swings easily in its hinge-bearings O O, which are bolted firmly to the floor S, and when swung forward in position for work its apex is just within the door of the car, and when not required for use can be swung back upon the frame A.

Q is a hollow stud fastened to the frame A, and carrying within it a spring and piston which is projected against the flange of the drum B to check its recoil when thrown out of gear while at work.

The mode of operating my invention is illustrated by the accompanying drawing, and it will be readily seen by description that in seizing the scraper by the handles *z z* and carrying the same back into the car to be unloaded, the rope is freely delivered from the loose drum B, until the collar K impinges upon the loop of lever G, which trips the vibrating ball F, by means of which the forked lever C throws the clutch D into gear with the drum B, and carries the same with it, winding up the rope T and bringing forward the scraper with its load of grain to the mouth of the car, when the fixed collar P is brought into contact with the looped lever G and reverses its action, throwing the clutch D out of gear, and thus relieving the scraper to return for another load.

The hooks *v v*, to which the ropes are attached for working it, are open at top, which, in case of its meeting unyielding obstacles while working, enables the ropes to unhook themselves as the top of the scraper is thrown forward out of the power of the workman to control.

In cases where it is impracticable or inconvenient to throw the drum into gear by means of a knob or protuberance on the cord, by reason of the unequal distance to which the shovel is drawn from the drum, I propose to employ a cord attached to the clutch-lever G, and passing around suitable guides or pulleys to the interior of the car, where, by means of removable or adjustable attachments, it is placed in convenient reach of the hand of the operator. The drum will be thrown out of gear by the automatic device first described, and the operator, after having drawn the shovel back to the required distance and place, pulls the cord to throw the clutch into gear and the work then proceeds as before. The attachments of this cord may consist of a suitable number of pulleys and fixed hooks, or of movable pulleys attached to the rafters or

their parts of the car by clamps or other suitable means.

It is manifest that my invention may be employed for forwarding grain to elevators or for other shoveling of grain or material in warehouses or vessels as well as to unloading cars.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A shovel or scraper, N, attached by a cord or its equivalent to a drum, B, rotated by any suitable power, and adapted to be automatically thrown out of gear as the shovel approaches the end of its stroke, substantially as herein described.

2. The hinged or swinging frame L, employed in combination with the shovel N and drum B, substantially as and for the purposes set forth.

3. The automatic clutch-movement C D F G H, operating in combination with the aforesaid shovel N, drum B, and cord T, substantially as specified.

ELIPHALET M. CLARK.

Witnesses:

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