

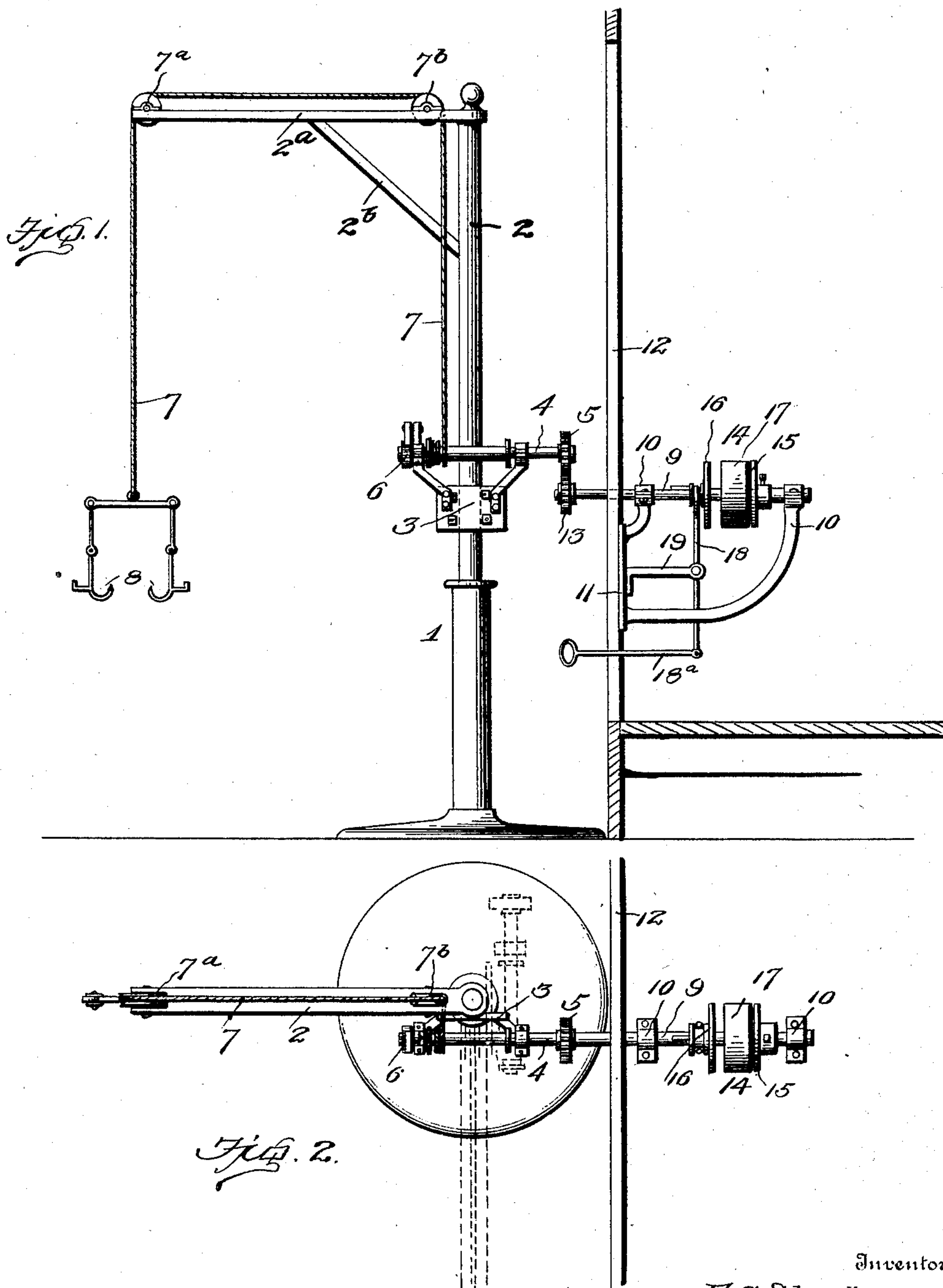
No. 719,526.

PATENTED FEB. 3, 1903.

E. C. STARKS.
LOADING OR UNLOADING DEVICE.

APPLICATION FILED MAY 22, 1902.

NO MODEL



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

ELMER C. STARKS, OF SHERIDAN, WISCONSIN.

LOADING OR UNLOADING DEVICE.

SPECIFICATION forming part of Letters Patent No. 719,526, dated February 3, 1903.

Application filed May 22, 1902. Serial No. 108,520. (No model.)

To all whom it may concern:

Be it known that I, ELMER C. STARKS, a citizen of the United States, residing at Sheridan, in the county of Waupaca and State of Wisconsin, have invented certain new and useful Improvements in Loading or Unloading Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates generally to swinging cranes and derricks for lifting and conveying heavy articles from one point to another, and has particular relation to devices for loading and unloading wagons of their contents and depositing the same at the desired point.

The object of the present invention is to produce a device which will be particularly adapted to hoisting cans of milk out of a wagon and swinging them over a receiving-can forming part of a milk-weighing device and depositing the contents of the hoisted can in the receiving-can and then returning the emptied can to the wagon.

A further object is to produce a device of the character described which will be simple in construction, durable and practical in use, easily operated, and which will be well adapted to the purpose for which it is designed.

With these and other objects in view the device consists in the construction and arrangement of the parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the device, and Fig. 2 is a top plan view showing in dotted lines the position of the parts when the crane has been swung inwardly to deposit the load.

In the drawings, 1 denotes the standard of a swinging crane. 2 denotes the swinging portion of the crane rotatably mounted in said standard. The said swinging portion 2 has fixed to its upper end a laterally-projecting arm or boom 2^a, suitably braced thereto by means of a brace-bar 2^b.

3 denotes a bracket bolted to the swinging portion of the crane. In the outwardly-projecting arms of said bracket is journaled a shaft 4 of a windlass.

5 denotes a spur-gear pinion fixed on one end of the shaft 4, and to the opposite end of said shaft is fixed a ratchet-wheel 6, which is engaged by a pivoted pawl to prevent retrograde movement of the windlass-shaft, except at the proper time, when the pawl will be disengaged from the ratchet.

7 denotes the hoisting rope or cable, which is adapted to be wound on the windlass-shaft 4 and passing over the pulleys 7^a and 7^b is connected at its free end to suitable grappling-hooks 8, which engage the can or article to be hoisted.

9 denotes a horizontally-disposed shaft journaled in bearings formed on the upper ends of the arms 10 of a bearing-bracket 11, attached to the inner side of the wall 12 of the weighing-room, the shaft 9 projecting through an opening in the wall 12 and being provided on its outer end with a spur-gear pinion 13, adjacent to and normally in mesh with the spur-gear pinion 5.

14 denotes a friction-clutch mounted on the inner end of the shaft 9 and consists of a disk or plate 15, fixed rigidly to said shaft, and 16 denotes a similar disk or plate keyed to slide longitudinally on said shaft and to rotate therewith. Between the plates 15 and 16 is a band-pulley 17, loosely mounted on the shaft 9 and driven by a belt from a source of power not shown in the drawings. The plate 16 is provided on its outer free end with a grooved hub or collar, which is adapted to be embraced by the forked ends of a clutch-shifting lever 18, pivoted to an arm 19, projecting from the attaching-plate of the bearing-bracket 11. The free end of the lever 18 may be provided with an operating-arm 18^a, projecting through an opening in the wall 12 and in convenient reach of the operator. The forked end of the lever 18 may be provided with antifriction-rollers at its point of engagement with the hub of the disk 16.

The operation of the device is as follows: When the grappling-hooks have been connected to a can or other article to be hoisted, the clutch-lever 18 is operated to shift the plate or disk 16 against one side of the continuously-revolving band-pulley, forcing the same against the fixed disk or plate 15, thereby frictionally clamping the band-pulley be-

tween the said plates and causing them and the shaft to rotate with the said pulley. The spur-pinions 5 and 13 being in mesh, the windlass-shaft will be rotated to wind up the cable 5 7 and hoist the can to the desired height. The clutch-lever is then shifted to throw the clutch out of gear with the shaft 9, and the crane is then swung around, carrying the can to the desired position. It will be observed 10 that in this movement the gears 5 and 13 are disengaged. Upon the return movement of the crane and after the empty can has been lowered by gravity, upon releasing the pawl from the ratchet-wheel 6 the gears 5 and 13 15 are again engaged with each other and the device is ready for attachment to another can.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without requiring an extended explanation. 20

Various changes in the form, proportion, and details of construction may be made 25 within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is— 30

In a device of the character described, the combination of a swinging crane, a windlass-shaft carried by said swinging crane, a cable adapted to be wound on said windlass-shaft, grappling-hooks attached to said cable, means 35 for holding said shaft against retrograde movement, a spur-gear pinion fixed to one end of said windlass-shaft, a counter-shaft extending in a plane parallel to said windlass-shaft and journaled in fixed bracket-arms, a 40 spur-gear pinion fixed on the outer end of said counter-shaft and normally in engagement with the pinion on said windlass-shaft, a continuously-driven pulley loosely mounted on said counter-shaft, a friction-clutch also 45 mounted on said counter-shaft adjacent to said driven pulley, adapted to be operated to connect said pulley with said counter-shaft to drive the same, substantially as set forth.

In testimony whereof I have hereunto set 50 my hand in presence of two subscribing witnesses.

ELMER C. STARKS.

Witnesses:

CHAS. CHURCHILL,
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