

No. 676,787.

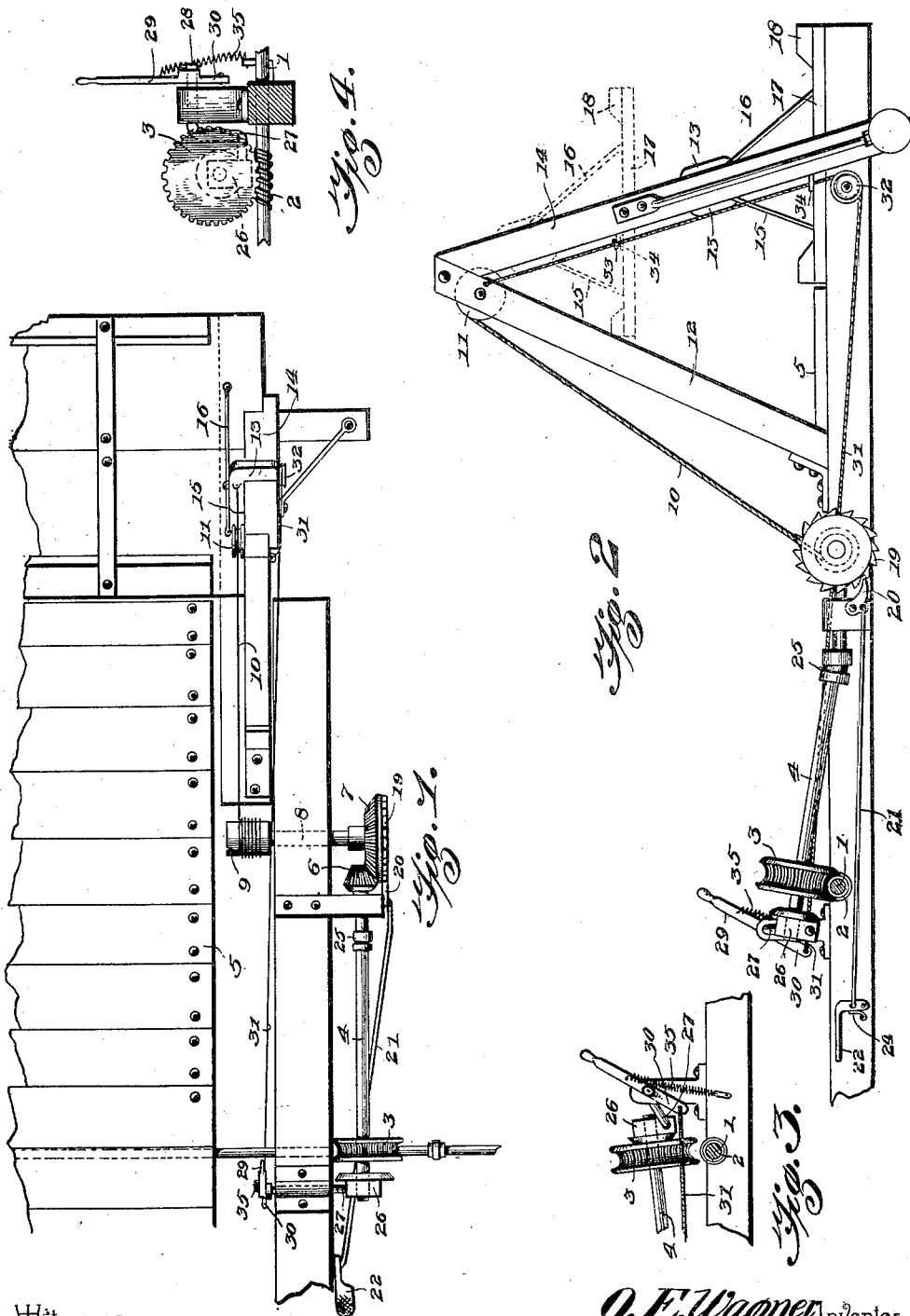
Patented June 18, 1901.

O. E. WAGNER.

COMBINED SHIFTING DEVICE AND BRAKE.

(Application filed Feb. 23, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

OSCAR E. WAGNER, OF PONTIAC, ILLINOIS.

COMBINED SHIFTING DEVICE AND BRAKE.

SPECIFICATION forming part of Letters Patent No. 676,787, dated June 18, 1901.

Application filed February 23, 1901. Serial No. 48,536. (No model.)

To all whom it may concern:

Be it known that I, OSCAR E. WAGNER, a citizen of the United States, residing at Pontiac, in the county of Livingston and State of Illinois, have invented a new and useful Combined Shifting Device and Brake, of which the following is a specification.

The invention relates to a combined shifting device and brake for controlling the descent of a wagon after the same has been elevated to an inclined position for discharging its contents into a conveyer.

One object of the present invention is to provide a simple and comparatively inexpensive construction adapted after a wagon-body has been elevated to an inclined position for discharging its contents into a conveyer of enabling the descent of the wagon to be readily controlled.

A further object of the invention is to provide a device of this character which will be capable of automatically throwing out of mesh the gearing for elevating a wagon-body after the same has been raised to the desired extent, whereby the gearing for raising and lowering the wagon-body may be connected with that for operating the conveyer and may be left unattended until it is desired to lower the wagon.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a portion of a wagon dump and elevator provided with a combined shifting device and brake constructed in accordance with this invention. Fig. 2 is a side elevation of the same, the gearing being in mesh and the parts being arranged for elevating a wagon. Fig. 3 is a detail view illustrating the arrangement when the gearing is out of mesh. Fig. 4 is a detail sectional view illustrating the arrangement of the shifting mechanism.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a shaft, designed to be arranged as shown and described in an application filed

by me August 7, 1900, Serial No. 26,168, for a portable wagon dump and elevator and provided with a worm 2, meshing with a gear-wheel 3 of a shaft 4, which is arranged at right angles to the main shaft 1 and which is located at one side of a frame or platform 5, as clearly indicated in Fig. 1 of the drawings. The main shaft, which may be rotated by any suitable means, is connected with and adapted to operate an elevator, as explained in the said application, and the shaft 4 is designed to communicate motion to the mechanism hereinafter explained for raising a wagon to an inclined position for discharging its contents into a conveyer or endless carrier, as set forth in the said application. The gear-wheel 3 is arranged near one end of the shaft 4, and a bevel-pinion 6 is arranged at the other end of the shaft 4 and meshes with a bevel gear-wheel 7 of a shaft 8. The shaft 8, which is a windlass-shaft, extends across the platform at a point beneath the same, as indicated in Fig. 1, and it is provided with a drum 9, having a cable 10 or other flexible connection wound around it. The cable or flexible connection 10 passes over a pulley 11 of a substantially A-shaped frame or standard 12, which forms a guide for a slide 13. The A-shaped frame or standard 12 is designed to be arranged at each side of the platform, and the guide 14 of the A-shaped frame or standard is inclined, and the slide, which is secured to the adjacent end of the flexible connection, is connected by rods 15 and 16 with a vertically-movable platform 17, arranged to receive the front wheels of a wagon and adapted to be elevated to tilt the wagon body or box for discharging the contents of the same. The vertically-movable section or platform 17 is provided with suitable stops 18, adapted to retain the wheels on it. When the windlass-shaft is rotated in the proper direction for winding up the flexible connection or cable on its drum, the slide and the platform or section will be elevated, and as the guide is inclined the platform will be moved inward slightly as it is raised. By this arrangement the wagon will be raised and lowered without moving the same longitudinally. The windlass-shaft also carries a

ratchet-wheel 19, which may be formed integral with the bevel-gear 7 or be constructed separate therefrom, and the said ratchet-wheel is engaged by a dog or detent 20, arranged, as clearly indicated in Fig. 2 of the accompanying drawings, and connected by a rod 21 with a foot-lever 22. The pawl or dog, which may be constructed in any suitable manner, is preferably retained in engagement with the ratchet-wheel by a spring 24, which bears against the foot-lever. The foot-lever, which is L-shaped, is pivoted at one end, and it has a horizontal arm arranged to be depressed by the foot of the operator to disengage the pawl or dog from the ratchet-wheel to permit the windlass-shaft to rotate for unwinding the cable or flexible connection 10.

In order to control the rotation of the windlass-shaft and the descent of the wagon-body after the contents thereof have been discharged, a combined brake and shifting device is provided. The shaft 4 is provided with a knuckle-joint 25, located near one of its ends, and the body portion of the shaft 4 is adapted to be swung upward and downward to arrange the gear-wheel 3 in mesh with the worm 2 and to carry it out of such engagement. A sliding block 26 is mounted on the shaft 4, adjacent to the gear-wheel 3, and is connected with a crank 27 of a shaft 28, journaled in suitable bearings and connected with a lever 29, which is adapted to be oscillated. When the shaft is in the position illustrated in Fig. 3 of the drawings, the sliding brake-block, which is provided with openings for the shaft 4 and for the crank-shaft 28, is arranged adjacent to one of the side faces of the gear-wheel 3, and is provided adjacent to the same with a flat engaging face and is adapted to be carried into engagement with the gear-wheel 3 by forcing the handle or lever outward. The friction is sufficient to control the rotation of the shaft 4, and by this construction the shifting device is also adapted to operate as a brake, and it will enable the wagon to be slowly lowered to a horizontal position.

The lever 29 is secured between its ends to the outer end of the crank-shaft 28, and it is provided with a lower depending arm 30, which is connected with one end of an operating cord or connection 31, extending longitudinally of the frame or platform 5, as clearly shown in Fig. 2, to a guide-pulley 32, located adjacent to the guide 14. The flexible operating connection 31 extends upward from the guide-pulley 32 to the top of the A-shaped standard, and this upwardly-extending portion is arranged parallel with the guide and is provided with a button or stop 33, arranged to be engaged by the vertically-movable section or platform when the same arrives at the limit of its upward movement, whereby the operating cord or connection will

be pulled to shift the lever 29 and throw the same from the position shown in Fig. 2 to that illustrated in Fig. 3. The vertically-movable section or platform is provided with an eye or projection 34, located at the upwardly-extending portion of the operating-cord and preferably receiving the same and adapted to engage the button or stop. The operating-lever is automatically held in either of its positions by means of a coiled spring 35, connected at its upper end with the upper arm of the lever and secured at its lower end to the frame and adapted to swing to either side of the center. The spring is distended when the lever is swung from one position to the other, and it will be apparent that it is adapted to hold the lever and maintain the gear-wheel 3 in or out of mesh with the worm of the main shaft.

It will be seen that the combined shifting device and brake is exceedingly simple and inexpensive in construction, that it is automatic in its operation, and that it is capable of enabling a wagon to be slowly lowered to a horizontal position after its contents have been discharged. It will also be apparent that it will enable the gearing for elevating the wagon to be connected with the gearing for operating the elevator without interfering with the continuous operation of the latter, as the gearing for raising the wagon will be automatically thrown out of mesh with the other gearing when the wagon has arrived at the desired elevation.

What I claim is—

1. The combination with a shaft having a worm, of a movable shaft having a gear-wheel meshing with the worm and adapted to be carried out of engagement with the same, a brake-block mounted on the shaft and arranged to engage the gear-wheel, and means for automatically raising and lowering the movable shaft and for simultaneously carrying the brake-block into and out of engagement with the gear-wheel, substantially as described.

2. The combination with a worm, of a movable shaft having a gear-wheel and adapted to carry the same into and out of mesh with the worm, a brake-block for engaging the gear-wheel, and means for automatically moving the shaft to carry the gear-wheel into and out of mesh with the worm and for simultaneously carrying the brake-block into and out of engagement with the gear-wheel, substantially as described.

3. The combination of a movable shaft having a gear-wheel and adapted to be operated to carry the gear-wheel into and out of mesh, a brake-block arranged to engage the gear-wheel, and means for moving the shaft and for simultaneously actuating the brake-block, substantially as described.

4. The combination of a movable shaft having a gear-wheel and adapted to be operated

to carry the same into and out of mesh, a
brake-block mounted on the shaft and ar-
ranged to engage the gear-wheel, a crank-
shaft connected with the brake-block and
5 adapted to move the said shaft and simulta-
neously actuate the block, and means for op-
erating the crank-shaft, substantially as de-
scribed.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in 10
the presence of two witnesses.

OSCAR E. WAGNER.

Witnesses:

D. C. EYLAR,
J. M. LYON.