

(No Model.)

A. BOGARDUS.
HOISTING DEVICE.

No. 565,402.

Patented Aug. 4, 1896.

Fig. 1,

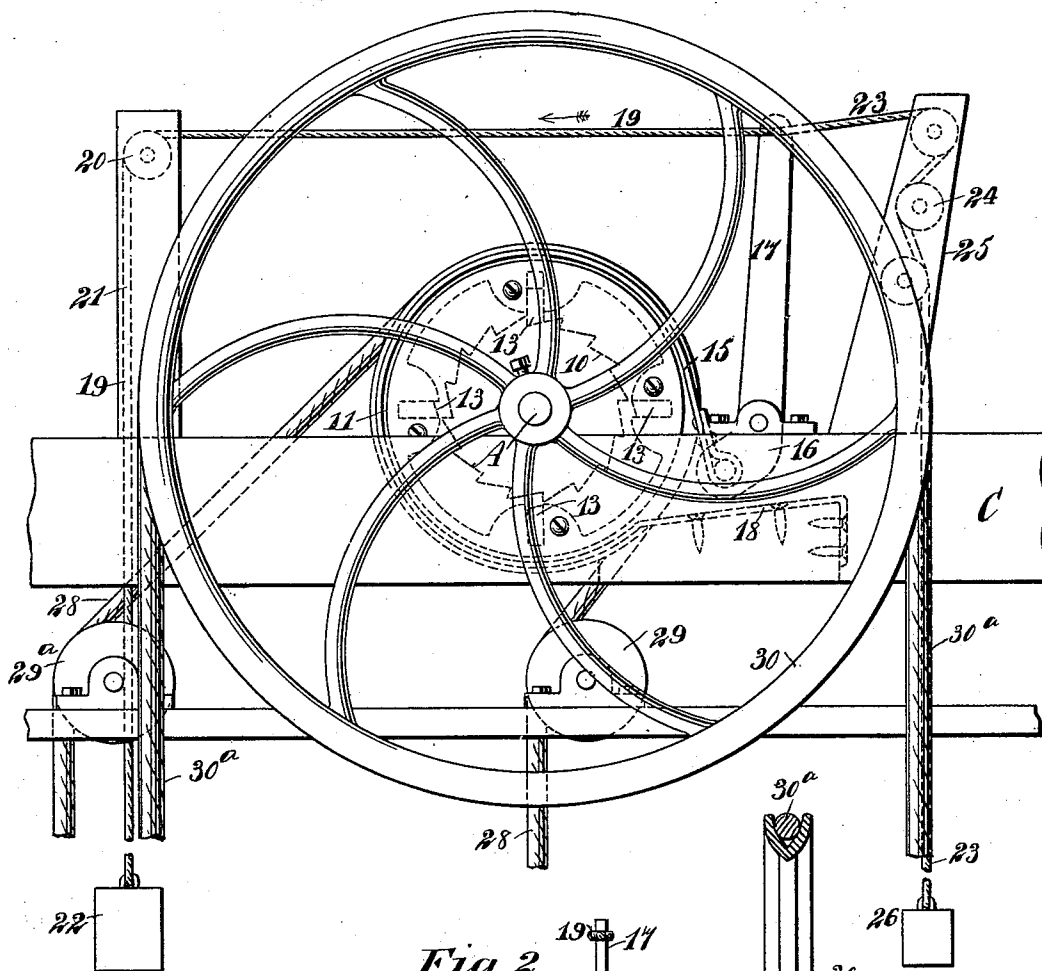
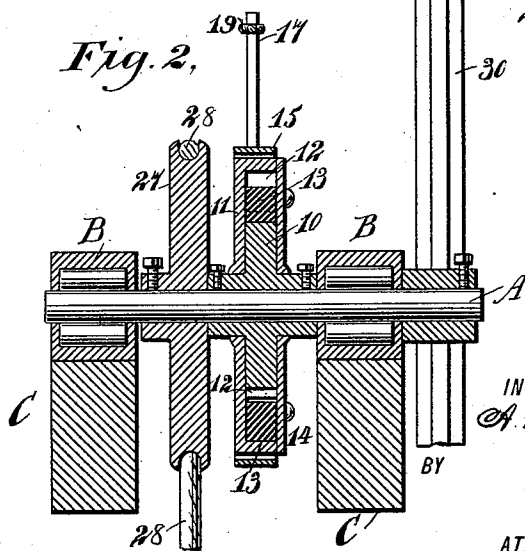


Fig. 2,



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALFRED BOGARDUS, OF JERSEY CITY, NEW JERSEY.

HOISTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 565,402, dated August 4, 1896.

Application filed April 10, 1896. Serial No. 586,978. (No model.)

To all whom it may concern:

Be it known that I, ALFRED BOGARDUS, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Hoisting Devices, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hoisting devices particularly applicable to dumb-waiters and like articles.

The object of the invention is to provide a hoisting device by means of which the dumb-waiter or other article attached may be permitted to descend rapidly or slowly as desired, and manipulated with but little exertion.

Another object of the invention is to provide a means for locking the hoisting device at any time necessary during the hoisting of the attached article, the locking mechanism acting automatically.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of the hoisting device. Fig. 2 is a longitudinal vertical section through the same, the shaft being in side elevation.

In carrying out the invention the hoisting-shaft A is mounted to turn in suitable bearings B, secured upon timbers C or the equivalents of the same. A ratchet or toothed wheel 10 is firmly fastened to the shaft A, preferably at a point near its center, and a box-wheel 11 is mounted to turn loosely on the hub of the ratchet-wheel, the flange of the box-wheel extending over the toothed portion of the ratchet-wheel, as shown in Fig. 2. The box-wheel is provided with one or more pockets 12, in which gravity-pawls 13 are mounted, the said pawls being adapted to engage with the toothed surface of the ratchet-wheel, as shown in Figs. 1 and 2, permitting the ratchet-wheel to turn freely in one direction, but preventing it from turning in the opposite direction.

The box-wheel is closed by a cap 14, secured to its flange, and the said cap prevents the pawls

13 from dropping out from the wheel, and likewise prevents dust and dirt from reaching the ratchet-wheel. A strap-brake 15 is made to partially surround the peripheral portion of the box-wheel 11, the said strap-brake being secured at one end to the crank-arm 16 of a lever 17, suitably journaled on one of the aforesaid timbers C, or upon any fixed support, while the opposite end 18 of the strap-brake is firmly fastened to a suitable support at a point below the crank-arm 16 of the lever, as illustrated in Fig. 1.

A rope 19 is attached to the upper end of the lever 17, being carried to one side of the device and downward over a pulley 20, journaled upon a suitable upright 21 or other support, and the rope 19 is provided with a weight 22 at its lower end, serving to hold the lever 17 in such position that the brake 15 will be normally applied to the box-wheel and consequently to the ratchet-wheel 10. A second rope 23 is attached to the lever 17, being led therefrom in an opposite direction to the rope 19, and the said rope 23 is passed over guide-pulleys 24, located upon an upright 25 or its equivalent, and at the lower end of the second rope 23 a weight 26 is attached, smaller than the weight 22 of the rope 19, so that when it is desired to release the brake from the box-wheel it is only necessary to draw upward upon or slacken the rope 19, whereupon the weight 26 will act to draw the lever 17 away from the box-wheel and loosen the brake thereon in proportion to the degree to which the aforesaid rope 19 is slackened, and the weight 26 likewise serves to render it easy to slacken the rope 19, since the full heft of the weight 22 will not be felt by the operator.

A pulley 27 is secured on the shaft A, and over this pulley a rope 28 is passed, which at one end is connected with a dumb-waiter or other article to be hoisted, the opposite end of the rope carrying a suitable counterbalance for the load, and the rope 28 is passed over guide-pulleys 29 and 29^a, suitably located. A large hoisting-wheel 30 is secured to the shaft A, and an endless rope 30^a is passed around this wheel, which in manipulated in the usual manner when the load is to be hoisted. It is evident that in this construction the ratchet-wheel will turn freely in the box-wheel while the load is being lifted;

but the moment that the operation of the hoisting-rope 30^a ceases the pawls 13 will immediately fall to an engagement with the teeth of the ratchet-wheel, preventing the
5 load from descending, and that at any time, as heretofore stated, by slackening the rope 19 the load will be permitted to descend more or less rapidly as desired.

Having thus described my invention, I
10 claim as new and desire to secure by Letters Patent—

1. In a hoisting apparatus, a shaft, a ratchet-wheel secured to the shaft, a box-wheel loosely mounted upon and surrounding the ratchet-wheel, pawls carried by the box-wheel, being adapted for engagement with the teeth of the ratchet-wheel, and a strap-brake contacting with and controlling the aforesaid box-wheel, as and for the purpose specified.

20 2. In a hoisting device, the combination, with a hoisting-shaft and a ratchet-wheel secured thereto, of a box-wheel loosely mounted upon and surrounding the ratchet-wheel, gravity-pawls located in the box-wheel, and
25 a strap-brake engaging with the peripheral portion of the box-wheel, as and for the purpose specified.

3. In a hoisting device, the combination, with a shaft, means for rotating the said shaft,
30 and a ratchet-wheel secured to the shaft, of a loosely-mounted box-wheel surrounding the ratchet-wheel, gravity-pawls located in the box-wheel, being adapted for engagement

with the ratchet-wheel, and a lever-operated strap-brake engaging with the periphery of
35 the said box-wheel, as and for the purpose specified.

4. In a hoisting device, the combination, with a shaft, means for rotating the said shaft, and a ratchet-wheel secured to the shaft, of
40 a loosely-mounted box-wheel surrounding the ratchet-wheel, gravity-pawls located in the box-wheel, a lever-operated strap-brake engaging with the periphery of the said box-wheel, and weighted ropes attached to the
45 lever of the strap-brake, leading therefrom in opposite directions, substantially as shown and described.

5. In a hoisting device, the combination, with a hoisting-shaft, means for rotating the
50 same, a pulley secured to the said shaft and arranged to carry the hoisting-rope, and a ratchet-wheel also secured to the shaft, of a loosely-mounted box-wheel provided with
55 gravity-pawls arranged for engagement with the teeth of the ratchet-wheel, a strap-brake engaging with the periphery of the box-wheel, a lever connected with the inner end of the said strap-brake, and ropes leading in opposite
60 directions from the said lever, the ropes being provided with weights of different hefts, as and for the purpose specified.

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Witnesses:

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