

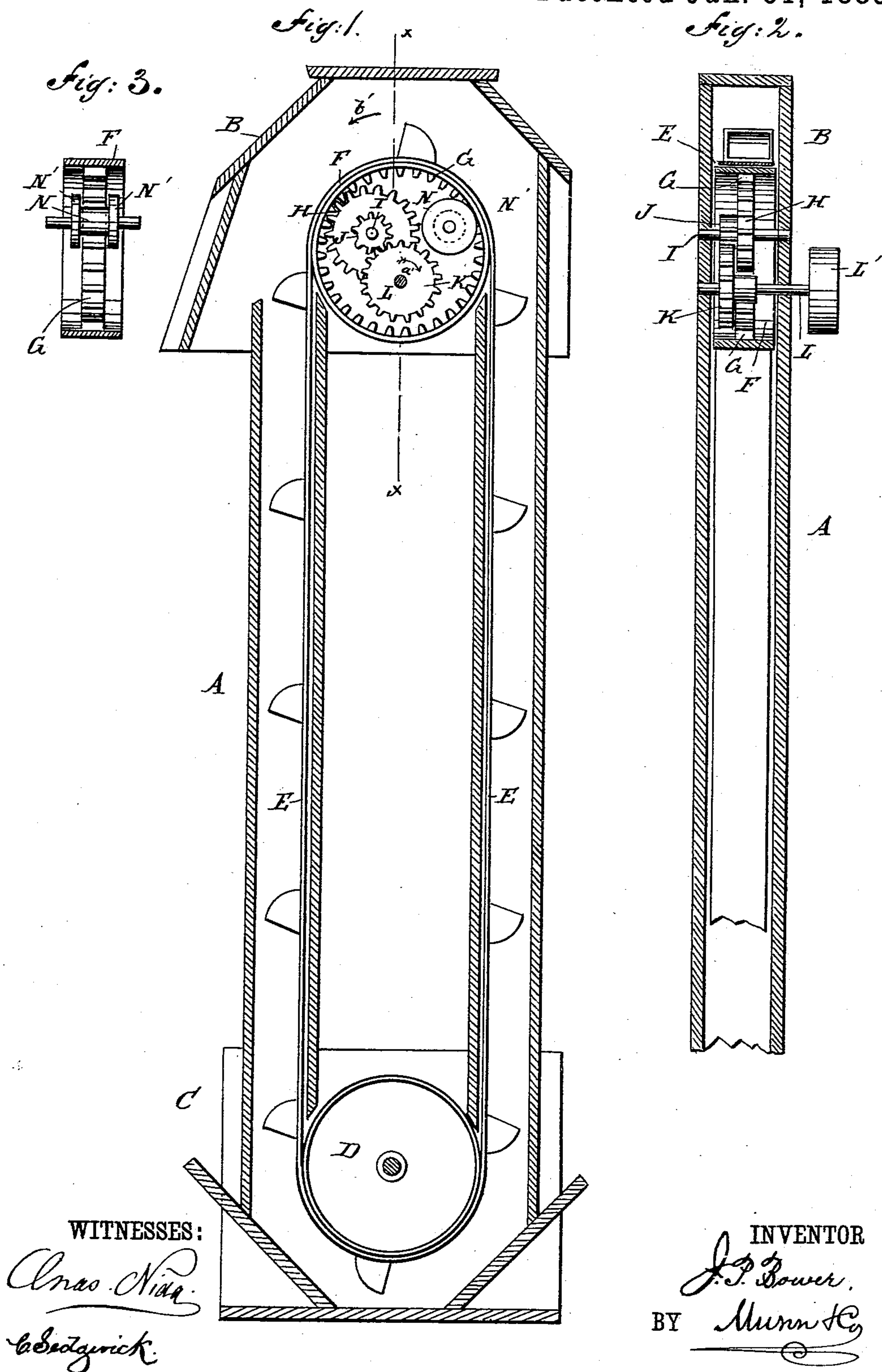
(No Model.)

J. P. BOWER.

DRIVING MECHANISM FOR ELEVATORS.

No. 377,139.

Patented Jan. 31, 1888.



UNITED STATES PATENT OFFICE.

JOSEPH PHILIP BOWER, OF DES MOINES, IOWA.

DRIVING MECHANISM FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 377,139, dated January 31, 1888.

Application filed June 8, 1887. Serial No. 240,634. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH PHILIP BOWER, of Des Moines, in the county of Polk and State of Iowa, have invented a new and Improved Driving Mechanism for Elevators, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved mechanism for driving elevators, which mechanism is simple and durable in construction, and, on account of being located inside of the elevator-head, presents no obstructions on the outside of the elevator-casing.

The invention consists of a belt-pulley having internal gear-teeth meshing into a gear-wheel rotated by a train of gear-wheels connected with the main driving-shaft, and of a double-flanged pulley forming part of the support for the said belt-pulley.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a sectional side elevation of an elevator provided with my improvement. Fig. 2 is a vertical cross-section of the same on the line $x x$ of Fig. 1, and Fig. 3 is a cross-section of the belt-pulley with the double-flanged supporting-pulley in elevation.

The elevator-casing A, of any approved construction, is provided with the head B and boot C, of which the latter carries the belt-pulley D, over which passes the elevator-belt E, provided with buckets of any approved construction. The elevator-belt E also passes over the pulley F, located in the elevator-head B, and provided with internal gear-teeth, G, which mesh into the gear-wheel H, secured to a shaft, I, mounted in suitable bearings in the sides of the head B.

On the shaft I is also secured, alongside the gear-wheel H, a pinion, J, meshing into the gear-wheel K, secured to the driving-shaft L, having its bearings in the sides of the elevator-head B, and carrying on this outer end the driving-pulley L', connected in the usual manner with the machinery for imparting a rotary motion to the main driving-shaft L.

The belt-pulley F has no arms and is supported partly by said gear-wheel H and partly by the two flanges N', formed on the pulley N, secured to a shaft mounted in the sides of the elevator-head B.

The operation is as follows: The rotary motion imparted to the main driving-shaft L in the direction of the arrow a' is imparted by the gear-wheel K and the pinion J to the shaft I, which imparts its rotary motion by the gear-wheel H to the gear-teeth G, formed on the inside of the rim of the belt-pulley F, so that the latter is rotated in the direction of the arrow b' , whereby the material placed in the boot C is elevated by the buckets of the belt E and discharged through the head B in the usual manner.

It will be seen that the mechanism for driving the elevator is placed inside of the elevator-head B, and only part of the driving-shaft L and its driving-pulley L' are on the outside of the elevator-casing, so that no obstruction whatever is on the outside of the casing.

It will further be seen that the driving-shaft L runs in an opposite direction to the belt-pulley F.

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

1. The combination, with an internally-toothed pulley and a driving-shaft passing through said pulley and carrying a gear-wheel, of another shaft passing through said pulley and carrying two gear-wheels, one of which meshes with the gear on the driving-shaft and the other with the internal gear of the pulley, and a supporting-wheel carried by a third shaft passing through the pulley, substantially as set forth.

2. In a driving-mechanism for elevators, the combination, with an elevator-belt pulley provided with the interior gear-teeth, of a gear-wheel meshing into the interior gear-teeth of the belt-pulley, means, substantially as described, for rotating said gear-wheel from the main driving-shaft, and a double-flanged pulley supporting with its flanges said belt-pulley, substantially as shown and described.

3. In a driving mechanism for elevators, a belt-pulley provided with internal gear-teeth, a double-flanged pulley supporting one side of said belt-pulley on the interior of its rim, in

combination with a gear-wheel meshing into said internal gear-teeth, a shaft supporting said gear-wheel, and a train of gear-wheels for rotating said shaft from the main driving-shaft, substantially as shown and described.

4. In a driving mechanism for elevators, the combination, with the elevator-head B and the main driving-shaft L, mounted in said head B, of the gear-wheel K, secured on said main driving-shaft L, the pinion J, meshing into said gear-wheel K, the shaft I, mounted in the sides of the head B and carrying said pinion J, the

gear-wheel H, secured on the said shaft I, the belt-pulley F, provided with the internal gear-teeth, G, meshing into said wheel H, and the double-flanged pulley N, secured to a shaft mounted in the sides of the head B, said double-flanged pulley N supporting in connection with the gear-wheel H, said belt-pulley F, substantially as shown and described.

JOSEPH PHILIP BOWER.

Witnesses:

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