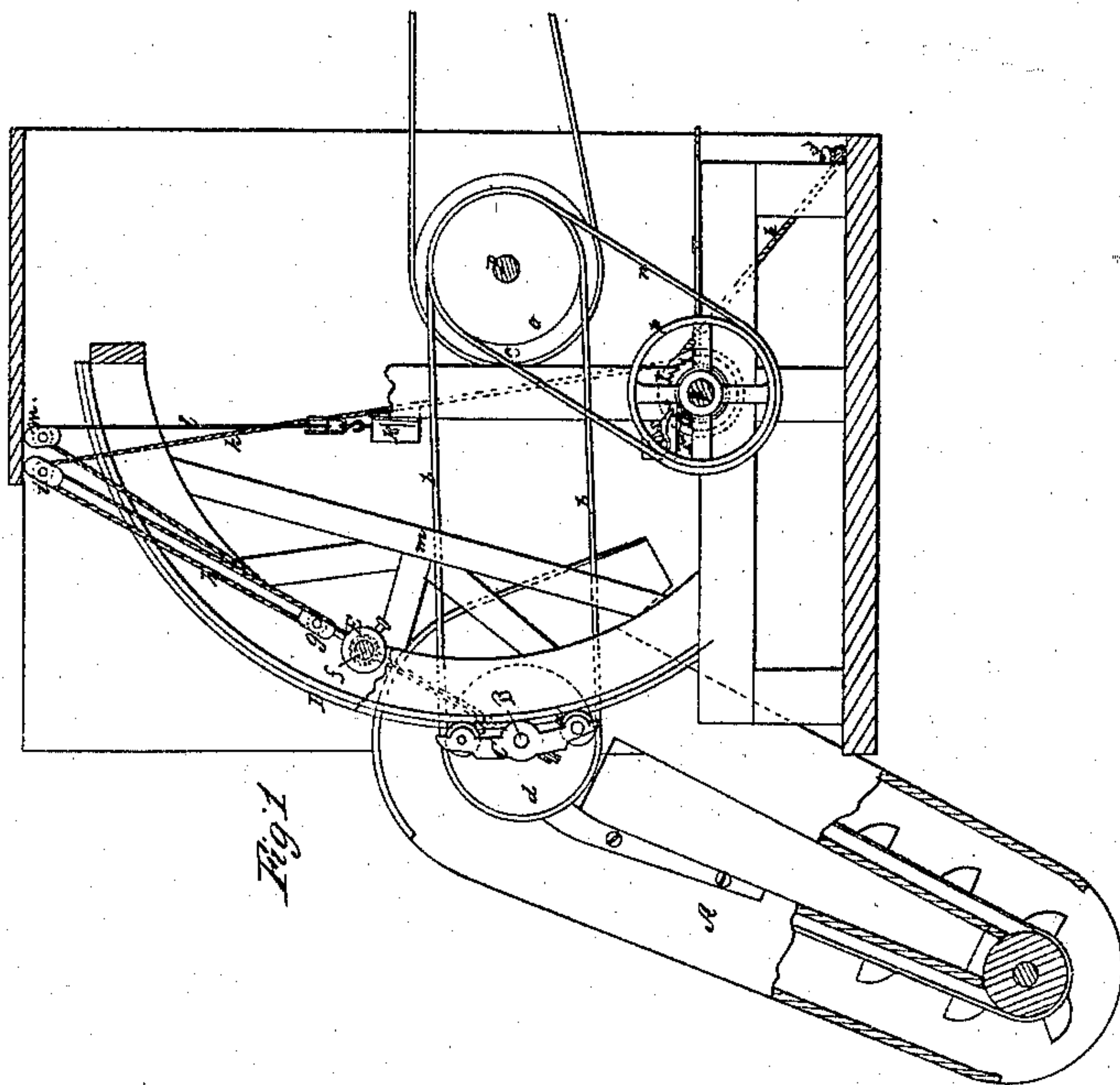
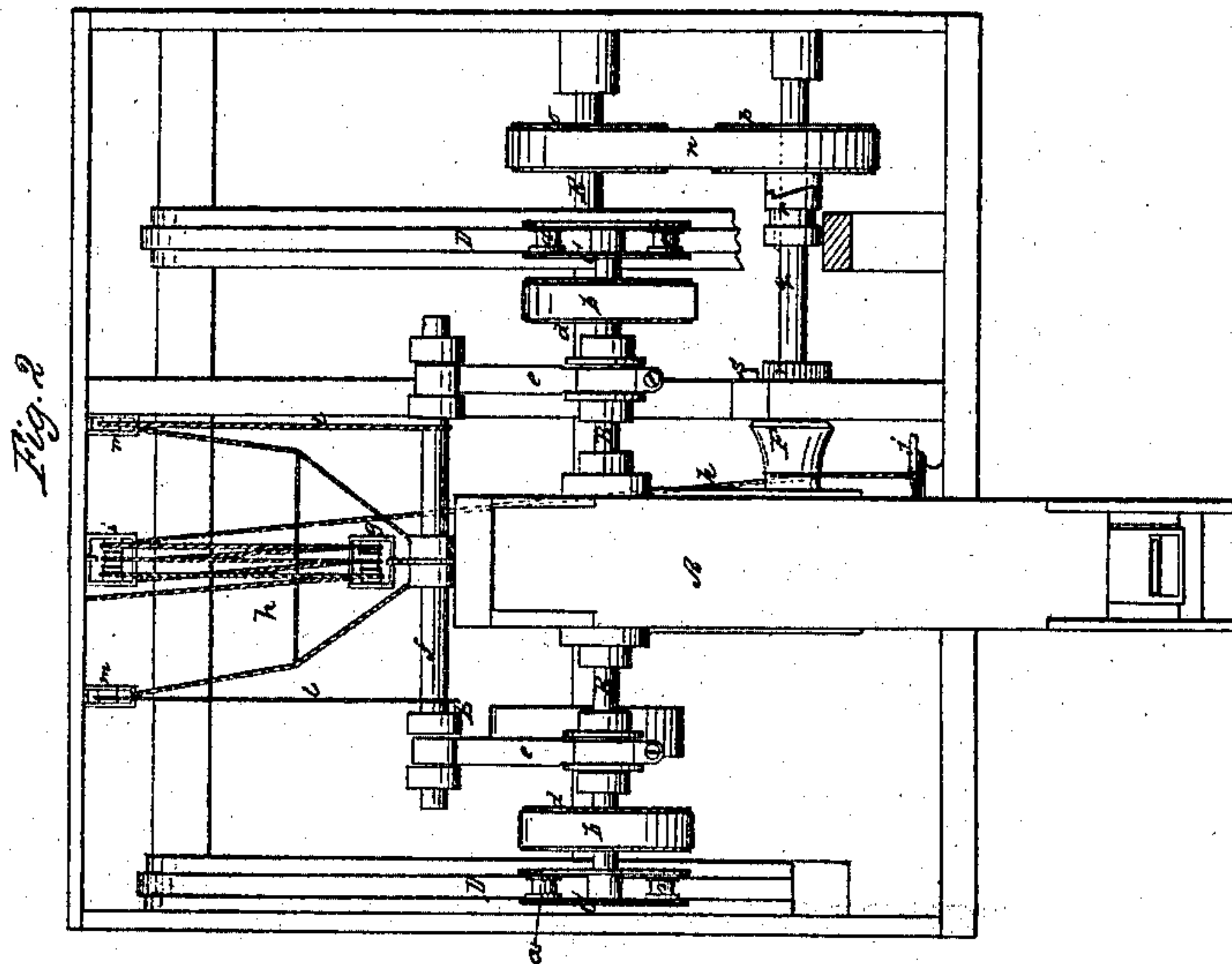


J. T. MOULTON.
TIDE WATER GRAIN ELEVATOR.

No. 43,222.

Patented June 21, 1864.



Witnesses;
Henry Aborn,
Geo W Reed

Inventor;
Jas T. Moulton
per Munnell

UNITED STATES PATENT OFFICE.

JOSEPH T. MOULTON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GRAIN-ELEVATORS.

Specification forming part of Letters Patent No. 43,222, dated June 21, 1864.

To all whom it may concern:

Be it known that I, JOSEPH T. MOULTON, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Tide-Water Grain-Elevator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any one skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a transverse vertical section of my invention. Fig. 2 is a front elevation of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to adapt an elevator to the holds of vessels at different stages of the water; the height of which may vary from six to seventy-five feet at different times of the day or in different seasons, and to avoid entirely the necessity of a belt-tightener which is now universally used.

The invention consists in a circular track, forming a portion of a circle described from the driving-shaft, in combination with suitable guide-wheels and with the elevator, to which motion is imparted by a suitable belt from the driving-wheel in such a manner that said elevator can readily rise and fall with the vessel from which grain or other material is to be elevated without requiring the least change in the length of the belt.

The invention consists, also, in suspending the elevator-shaft from a yoke, the arms of which form the bearings for said shaft, and which connects with a hoisting-tackle in such a manner that the elevator can be easily lowered down into or raised from the hold of a vessel and that the same can be adjusted at any desired height.

A represents the elevator, which is constructed, in the usual manner, of an endless belt, with buckets stretched over two pulleys and running in a suitable trunk, open at the bottom to take in the grain or other material to be elevated, and provided with a spout on top to discharge said material in suitable receivers. This elevator is put up in a suitable building or shed erected on a dock close to the water's edge, and it (the elevator) is in-

tended to discharge grain or other similar material from vessels floating on the water. As the water rises and falls the elevator must rise and fall also, and in order to effect this operation without effect on the driving-belt I have secured to the ends of the elevator-shaft B two carriages, C, each provided with one or more wheels, *a*, which run on circular tracks D. These tracks form portions of circles described from the center of the driving-shaft E, and motion is transmitted to the elevator-shaft by means of belts *b*, extending from pulleys *c* on the driving-shaft over pulleys *d* on the ends of the elevator-shaft. These belts hold the wheels of the carriages C down upon the trucks D, and said carriages, together with the elevator, can be raised or lowered from one end of the trucks to the other without changing the length of the belt. The elevator-shaft is suspended from a yoke, E, the arms *e* of which are provided with suitable boxes to form the bearings for said shaft. The cross-bar *f* of said yoke connects by a suitable ring or hook with a triple block, *g*, from which a rope, *h*, extends over a corresponding block, *i*, and down to a cleat, *j*, that is fastened to the dock or to the floor of the building or shed inclosing the entire mechanism. By means of the rope *h* the elevator can be raised or lowered to any desired position, and by belaying said rope on the cleat the elevator can be secured at any height. A weight, *k*, suspended from a rope, *l*, which branches off in two strands and runs over pulley-blocks *m*, and thence to the cross-bar *f* of the yoke E, serves to counterbalance the weight of said yoke and its attachments.

The operation of raising and lowering the elevator can be facilitated by means of the windlass F, to which a rotary motion is imparted by a belt, *n*, running from a pulley, *o*, on the driving-shaft over a pulley, *p*, on the windlass-shaft *q*. A sliding clutch, *r*, serves to throw the pulley *p* in and out of gear, and a ratchet wheel, *r*, and pawl *s* prevent the windlass from turning in the wrong direction. By giving one turn of the rope *h* round the windlass and holding onto the end of the rope when the pulley *p* is in gear with the sliding clutch the elevator can be readily raised without exertion. In lowering the ele-

vator the friction of the rope on the stationary drum of the windlass allows of controlling the descent of the same with little power.

What I claim as new, and desire to secure by Letters Patent, is—

1. The circular track or tracks D, applied, in combination with the elevator A and driving-shaft E, in the manner and for the purpose substantially as herein specified.

2. The carriages C, in combination with the elevator-shaft B, trucks D, and driving-shaft

E, constructed and operating in the manner and for the purpose substantially as set forth.

3. The yoke E, in combination with the elevator A, hoisting-tackle *g h i*, and windlass F, constructed and operating in the manner and for the purpose described.

JOSEPH T. MOULTON.

Witnesses:

JNO. F. PHILLIPS,
C. M. BRAGG.