

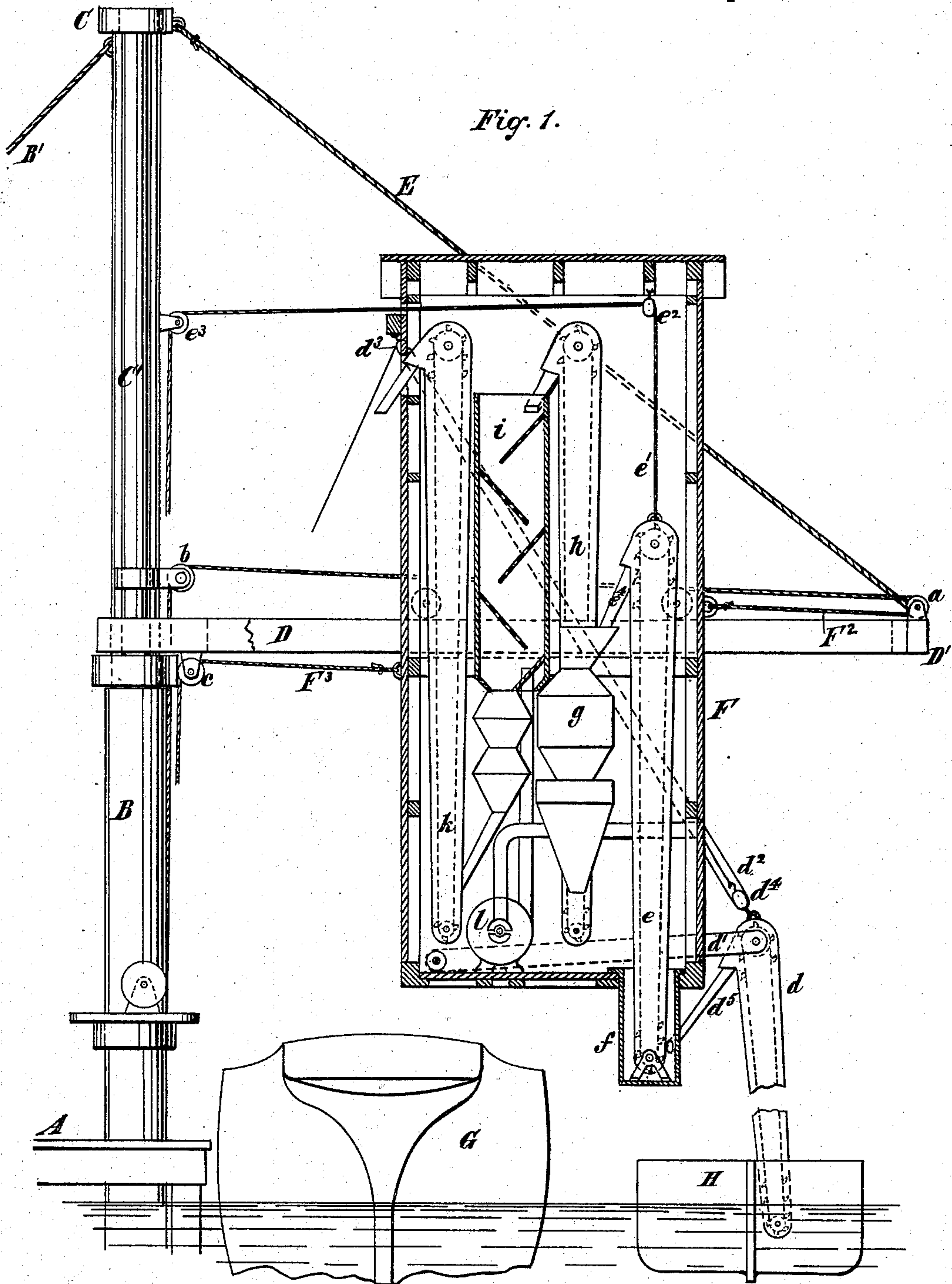
(No Model.)

3 Sheets—Sheet 1.

J. E. WALSH.
GRAIN ELEVATOR.

No. 284,263.

Patented Sept. 4, 1883.



Witnesses:
James R. Bowen.
T. J. Keane

Inventor:
John E. Walsh,
by his attorney
Edwin H. Brown.

(No Model.)

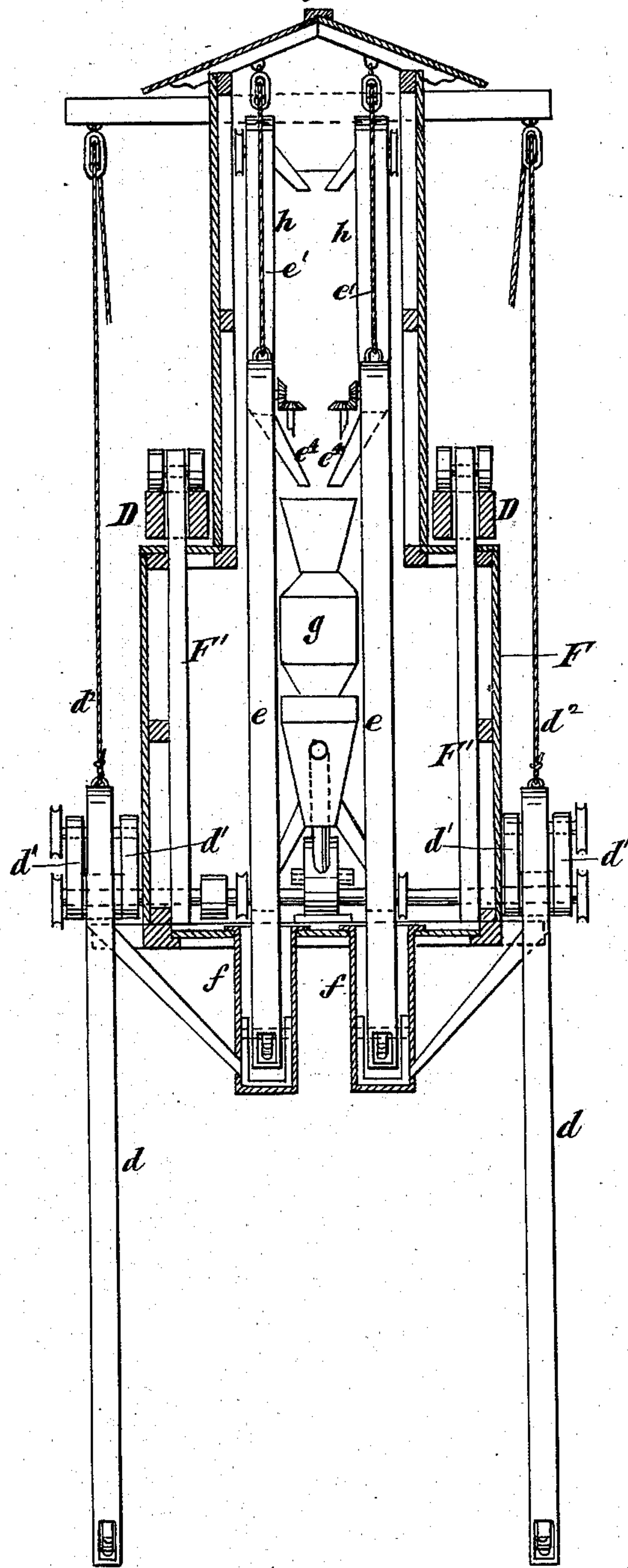
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Fig. 2.



Witnesses:

James R. Bowen:
T. J. Leane

Inventor:

John E. Walsh,
by his attorney,
Edwin H. Brown

(No Model.)

3 Sheets—Sheet 3

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Fig. 3.

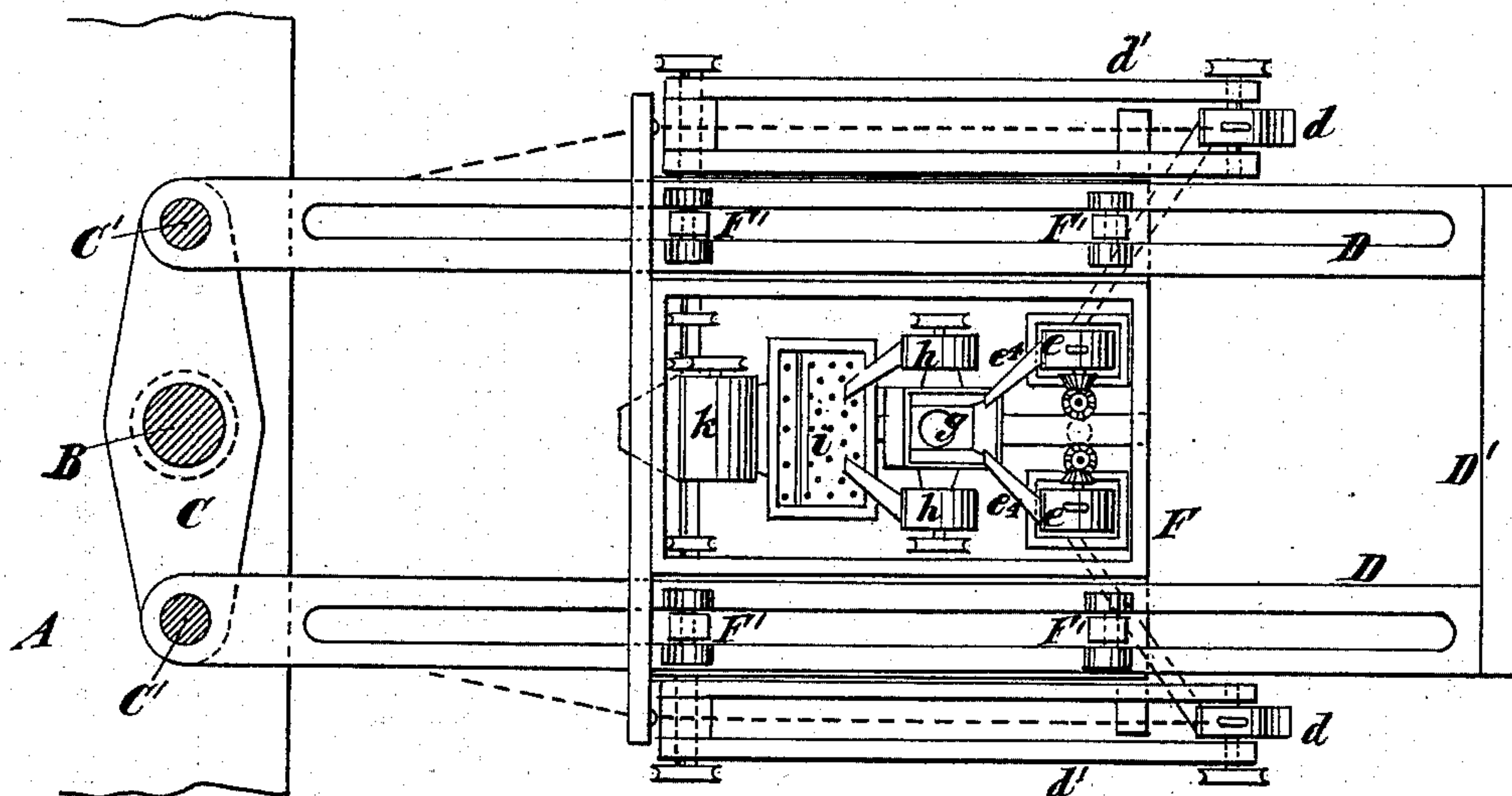
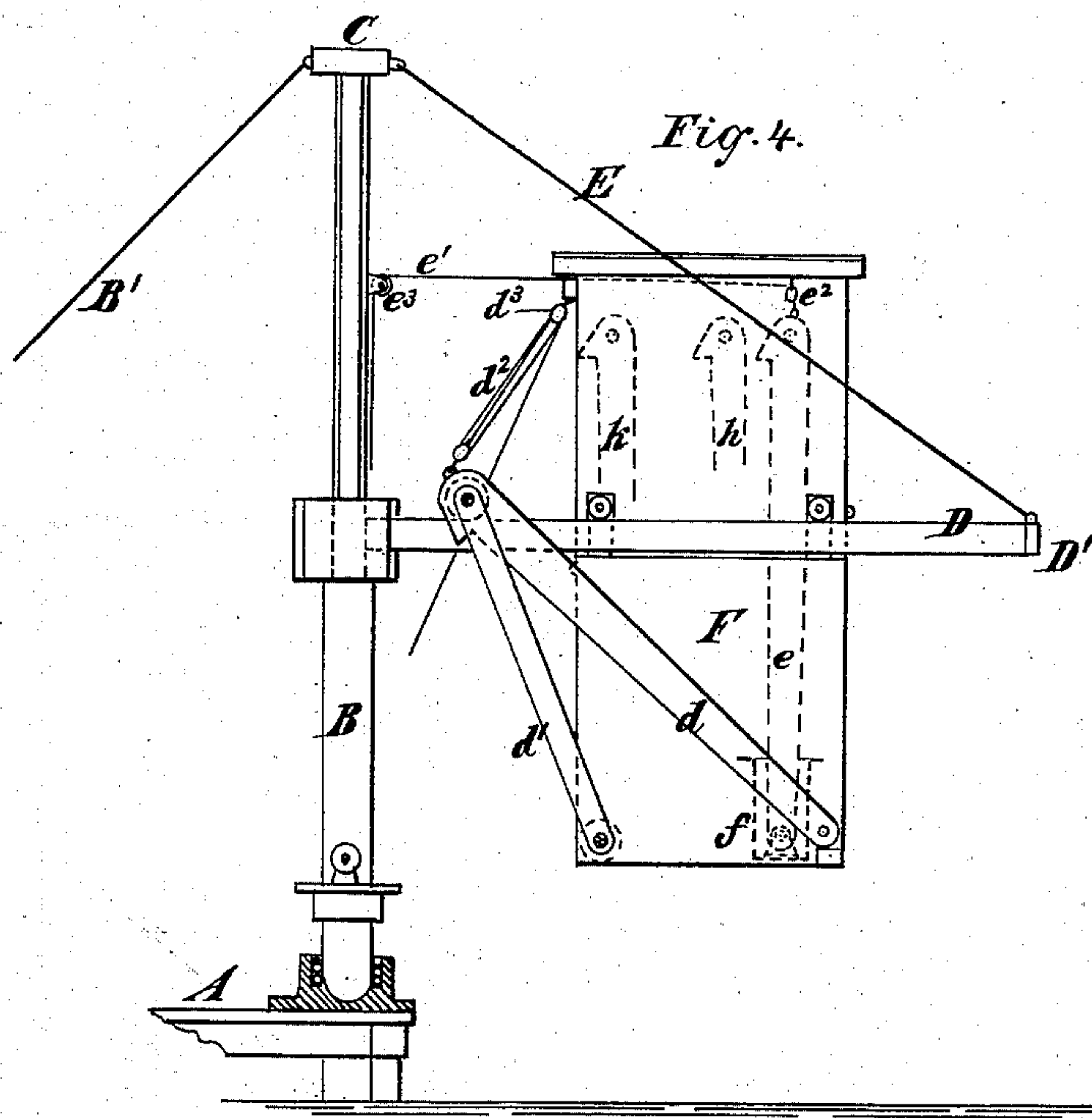


Fig. 4.



Witnesses:
James R. Bowen.
J. H. Lane

Inventor:
John E. Walsh,
by his attorney,
Edwin H. Brown

UNITED STATES PATENT OFFICE.

JOHN E. WALSH, OF NEW YORK, N. Y.

GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 284,263, dated September 4, 1883.

Application filed January 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WALSH, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Grain-Elevators, of which the following is a specification.

This improvement consists in the combination of a mast erected on a wharf or like place, an arm or arms supported thereon and adapted to be swung around into different positions, and a grain-elevator supported by the arm or arms.

The improvement also consists in the combination of a mast erected on a wharf or like place, an arm or arms supported thereon and adapted to be swung around into different positions, and a grain-elevator supported by and secured immovably to the arm or arms.

The improvement also consists in the combination of a mast erected on a wharf or like place and adapted to be turned or rotated in its support, an arm or arms rigidly connected to the mast and adapted to be swung around into different positions by the turning of the mast, and a grain-elevator supported by the arm or arms.

The improvement also consists in the combination, in a grain-elevator, of a swinging leg adapted to be lowered into a vessel, and a sliding leg adapted to be lowered, so that it can carry off grain from a point below the body of the elevator.

The improvement also consists in the combination, in a grain-elevator, of a swinging leg, a sliding leg, and a sliding chamber connected with the sliding leg and communicating with both the sliding leg and the swinging leg.

The improvement also consists in the combination, in a grain-elevator, of two swinging legs, two sliding legs and chambers, and a weigh-hopper to which grain taken from different parts of a discharging-vessel may be delivered.

In the accompanying drawings, Figure 1 is a sectional elevation of a grain-elevator embodying my improvement. Fig. 2 is a sectional elevation of the same taken in a plane at right angles to the plane of the section in Fig. 1. Fig. 3 is a horizontal section of the

elevator, and Fig. 4 is a side elevation of an elevator, illustrating certain modifications.

Similar letters of reference designate corresponding parts in all the figures.

A designates a wharf.

B designates a mast erected on the wharf and maintained in a fixed position. It is stayed by guy-ropes B'. The mast B is provided with yokes C, connected by poles C', and adapted to swivel or turn on the mast. To the lower of these yokes two arms, D, are connected, their outer ends being preferably connected by a cross-bar, D', and supported by a rope, E, connected to the upper one of the yokes C. By turning the yokes on the mast these arms may be swung around into different positions.

F designates a grain-elevator, shown as provided with hangers F', which pass through slots in the arms D, and are provided with wheels which run on the top of the arms. By means of ropes F² F³ this elevator may be moved outward or inward along the arms. The ropes F² are connected to the outer side of the elevator, pass thence around pulleys *a*, mounted on the cross-bar D'; thence around pulleys *b* on the poles C', and thence to a windlass or other suitable apparatus for operating them. The ropes F³ are connected to the inner side of the elevator, and pass around pulleys *c* to a windlass or equivalent device.

Although I have shown provision for moving the elevator along the arms, I may in many cases secure it in a fixed position. In either case the elevator can be swung over two vessels to facilitate the transfer of grain from one to another. I have in Fig. 1 shown the elevator swung over a ship, G, and a canal-boat, H.

The grain-elevator is provided with swinging legs *d*, which are adapted to be lowered into a vessel from which grain is to be removed. These legs are supported on arms *d'*, which are pivoted to the sides of the elevator, near the bottom, and have the said legs pivoted to them near the outer ends. Ropes *d*² are attached to these legs, passing thence around pulleys *d*³ on the upper portion of the elevator; thence down around pulleys *d*⁴, attached to the legs; thence around pulleys *d*⁵, and thence to one or more windlasses or like devices. The

legs may be lowered, as shown in Fig. 1, or raised, as shown in Fig. 4. At the upper portion they are provided with spouts d^5 , whence the grain, raised by bucket-elevators, with which they are provided, is discharged.

Inside the body of the elevator are sliding legs e . They are shown as suspended by ropes e' , which pass over pulleys e^2 ; thence around pulleys e^3 on the poles C' , and thence to one or more windlasses or analogous devices. These legs may, however, be raised and lowered by racks and pinions or other mechanism. These sliding legs are provided with bucket-elevators, and at the lower end are attached to chambers f , which slide through openings in the bottom of the elevator-body. When the sliding legs are raised these chambers are raised, and when the sliding legs are lowered the chambers descend with them. The spouts d^5 of the swinging legs discharge into the chambers f . By combining the sliding legs and chambers with the swinging legs and enabling the latter to discharge below the body of the elevator I can make the swinging legs shorter, and hence lighter and less cumbrous than they otherwise would have to be in order to reach to a given point. The spouts e^4 of the sliding legs discharge into weigh-hoppers g . The grain passes thence to legs h , provided with bucket-elevators. From the spouts of these legs the grain is delivered to a screening mechanism, i . Leaving this screening mechanism the grain passes to a leg, k , provided with a bucket-elevator, and from the spout of this leg the grain is discharged into the vessel to which it is to be transferred. An air-pump, l , supplies a current of air to aid in cleaning the grain.

By using two swinging legs and two sliding legs I am enabled take grain from two parts of the discharging-vessel, and to mix it before its delivery to the receiving-vessel.

The bucket-elevators and the air-pump may be driven in the usual or any other suitable manner.

In the elevator shown in Fig. 4 the mast B is supported in a step-bearing, so that it may

be turned or rotated, and the yokes C are immovably secured to the mast; hence the mast has to be turned or rotated to swing the arms around.

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

1. The combination of a mast erected on a wharf or like place, an arm or arms supported thereon and adapted to be swung around into different positions, and a grain-elevator supported by the arm or arms, substantially as specified.

2. The combination of a mast erected on a wharf or like place, an arm or arms supported thereon and adapted to be swung around into different positions, and a grain-elevator supported by and secured immovably to the arm or arms, substantially as specified.

3. The combination of a mast erected on a wharf or like place and adapted to be turned or rotated in its support, an arm or arms rigidly connected to the mast and adapted to be swung around into different positions by the turning of the mast, and a grain-elevator supported by the arm or arms, substantially as specified.

4. In a grain-elevator, the combination of a swinging leg adapted to be lowered into a vessel, and a sliding leg adapted to be lowered, so that it can carry off grain from a point below the body of the elevator, substantially as specified.

5. In a grain-elevator, the combination of a swinging leg, a sliding leg, and a sliding chamber connected with the sliding leg and communicating with both the sliding leg and the swinging leg, substantially as specified.

6. In a grain-elevator, the combination of two swinging legs, two sliding legs and chambers, and a weigh-hopper, to which grain taken from different parts of a discharging-vessel may be delivered, substantially as specified.

JOHN E. WALSH.

Witnesses:

T. J. KEANE,
JAMES R. BOWEN.