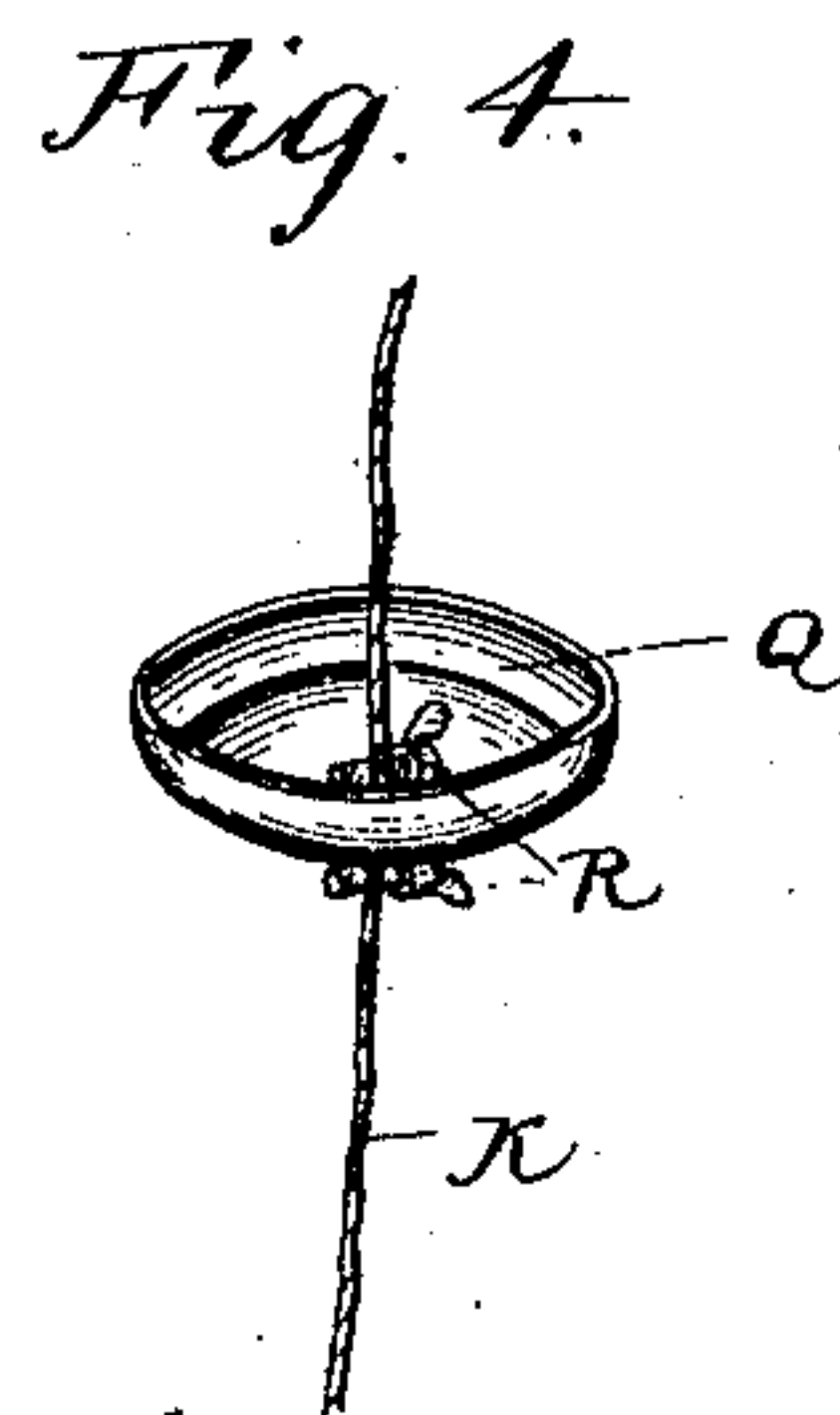
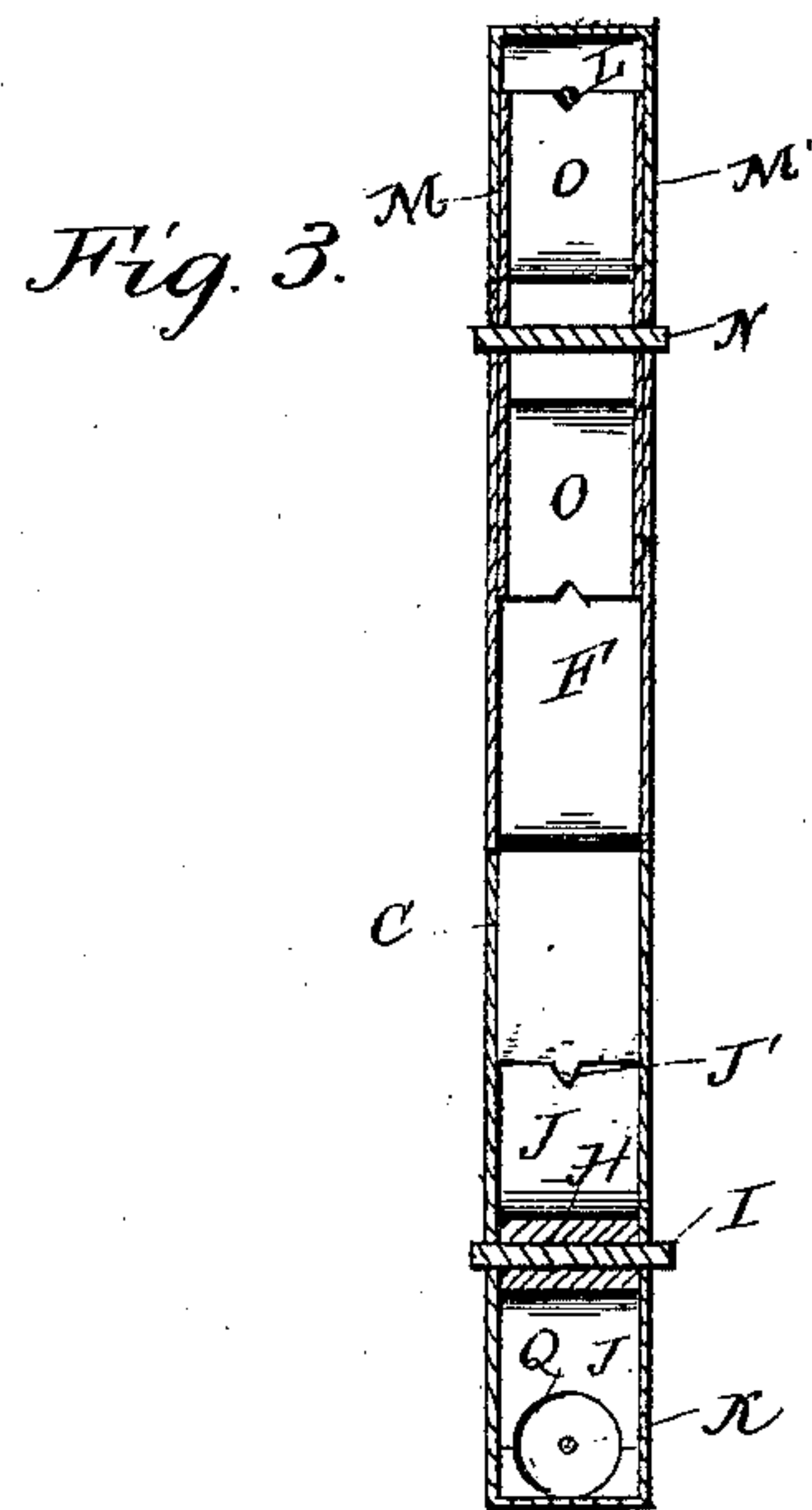
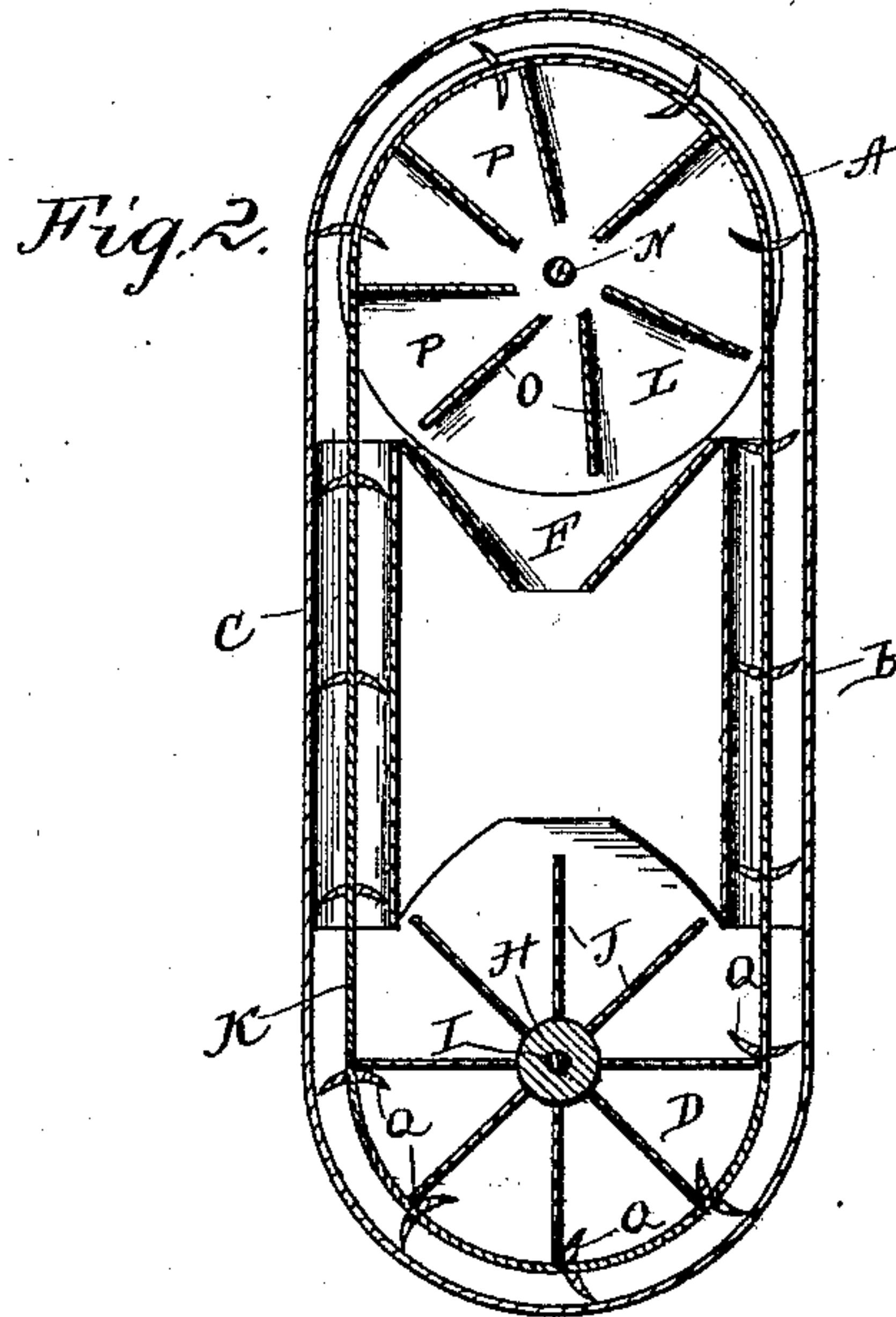
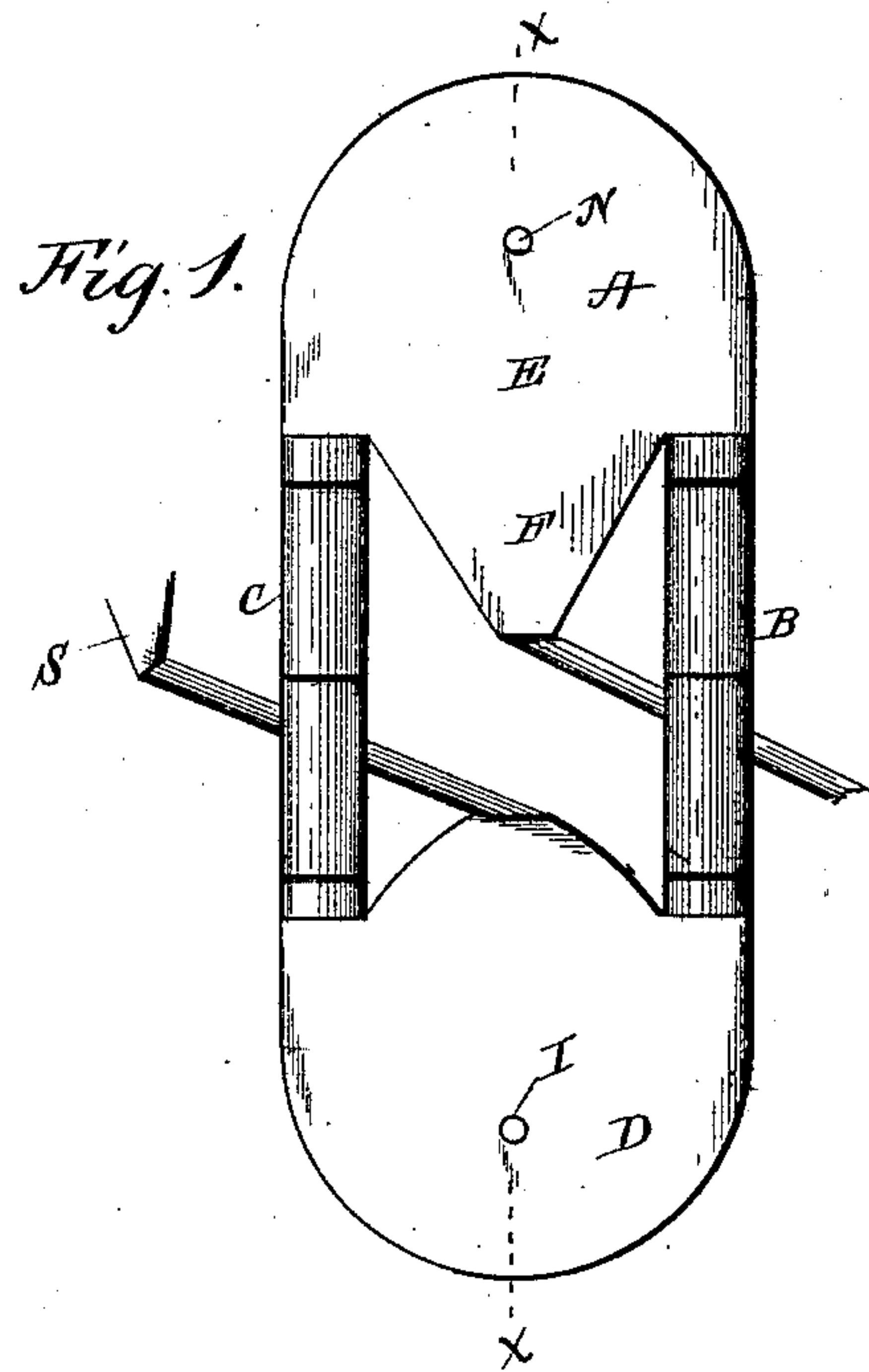


(No Model.)

R. H. EVERETT.
GRAIN AND FLOUR ELEVATOR.

No. 304,998.

Patented Sept. 9, 1884.



WITNESSES

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RICHARD HENRY EVERETT, OF VESTAL CENTRE, NEW YORK, ASSIGNOR TO
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GRAIN AND FLOUR ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 304,998, dated September 9, 1884.

Application filed July 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. EVERETT, a citizen of the United States, residing at Vestal Centre, in the county of Broome and State of New York, have invented a new and useful Elevator for Grain, Flour, &c., of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to elevators for elevating all kinds of grain, flour, &c.; and it has for its object to provide an elevator of the class referred to that shall possess superior advantages in point of simplicity, economy, safety, durability, and general efficiency; and the invention consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of an elevator embodying my improvements, parts of the casing being broken away to show portions of the internal mechanism. Fig. 2 is a vertical sectional view on the line $x x$ in Fig. 1. Fig. 3 is a vertical sectional view taken at right angles to the section shown in Fig. 2, and Fig. 4 is a detail view of one of the buckets and the mechanism for securing it to the cable.

Heretofore elevators of the class hereinbefore referred to have consisted of a wooden casing, the top and bottom portions of which were connected by rectangular wooden flues or spouts, in which an endless belt running over drums in the top and bottom of the casing was operated. This endless belt was provided with tin buckets bound at their mouths with iron or copper wire, and the buckets were secured to the endless belt by bolts or rivets passed through one of their sides, they being nearly or quite triangular in shape, and through the belt. In elevators of this construction the mouths of the buckets are rectangular in shape, and a space of one-fourth inch must be provided in the elevator-legs to prevent the buckets from catching at the sides. In time, especially in flour and meal elevators, this space becomes filled with dough that adheres to the sides of the elevator-legs, and the buckets become fast in the said legs, and either stick or are broken off from the belt. Besides this, the

belt has to be run very rapidly to insure the delivery of their contents to the bin above, and they seldom clear themselves of their contents, especially when elevating sticky material—such as flour—which is only partly discharged, a goodly portion of it being carried round and round in the buckets. The buckets are secured to the belt only at one side, and, being run very rapidly, there is danger of jerking them off when they receive their charge, and also at the time they deliver it. This is the state of the art at this time, so far as I have been able to ascertain, and it is and has been my aim to improve it, and this I believe I have done successfully in the manner which I will now proceed to explain.

Referring by letter to the accompanying drawings, A designates the casing of the elevator; B, the front or delivery leg, and C the guide or back leg, of the elevator, said legs B and C connecting the lower or feed bin, D, with the upper or receiving bin, E, provided with the discharge-hopper F. The entire structure, excepting the buckets and legs, is made of any suitable metal. The legs, being made of flint-glass tubing, are screwed together at the joints, so that the elevator is absolutely fire-proof and dust-proof. The feed-bin D has a semicircular bottom and the receiving-bin E has a semicircular top, as shown.

The feed-bin D is provided with a hub, H, upon a shaft, J, journaled in the side walls of said bin D. This hub H is provided with a series of flat radial arms, J, having grooves J' in their outer ends, in which grooves the endless cable K rests.

The receiving-bin E is provided with a wheel, L, formed of two heads, M M', secured to a shaft, N, having bearings in the side walls of said bin E, and are connected by partitions O, grooved in their outer ends, for the reception of the cable K. The inner ends of these partitions O terminate at some little distance from the shaft N, and form chutes or flues P in the wheel L. The partitions O are not radial partitions; but their inner ends are brought forward of the center of the shaft or radial lines about one inch on a horizontal line in an incline of eight inches, as shown. This construction causes the flue or chute P, when at the top-

most part of the casing, and at the time it receives its charge from the bucket, to deliver its charge to the flue below past the center of the wheel, or, in other words, causes the charge to be thrown toward the front leg, instead of the back leg, of the elevator, thereby avoiding and preventing the throw of the charge to the back leg.

The buckets Q are circular and concavo-convex in form, and are made of flint-glass. They are provided with a central hole each, through which the endless cable K is passed, and to which they are secured by set-screws R, or in any other suitable manner. This manner of securing the buckets Q makes the draft on them a direct central draft, instead of having it at one side, as heretofore practiced.

In supplying the elevator I feed directly to the middle of the feed-bin through a chute, S, instead of to the front leg. The buckets also deliver the charges at the middle of the top portion of the receiving-bin by simply dropping their contents as they pass over the wheel L. By dropping the charge at the middle the buckets do not require a high rate of speed, and need make only fifteen or twenty revolutions per minute, thus saving power and an immense amount of wear and tear and friction. The elevator can be driven from either the top or bottom shaft. The buckets fit the legs closely and work without friction of any consequence, and act as cleaners, so that no paste or hard dough can form on the inner surface of the legs, which, in the old elevators, in time becomes so offensive as to spoil the flour as it passes through. The flint-glass buckets are especially adapted to the elevation of hot meal, and the structure will work equally as well where there is steam or moisture to contend with, and the machine will last a life-time. Its simplicity, cheapness, and durability are obvious from the foregoing, and need no further comment.

Instead of the glass tubing, I may and do also use iron piping to form the elevator-legs; but I prefer the flint-glass tubing, as there is less friction, and it is more durable than the iron tubing. Even the iron tubing is far superior to the wooden legs.

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

1. The combination, with the metal casing and flint-glass elevator-legs, of the wire cable provided with flint-glass buckets, and mechanism, substantially as described, for operating the buckets, as set forth.

2. The combination, with the metal feed-bin and the metal receiving-bin connected by the metal pipe front and back elevator-legs, of the metal hub provided with flat radial arms having grooves in their outer ends on a shaft having bearings in the side walls of the feed-bin, the chute-wheel in the receiving-bin, and the endless cable provided with flint-glass buckets, substantially as specified.

3. The combination, with the receiving-bin of an elevator, of the wheel L on a shaft journaled in bearings in the side walls of said bin, said wheel L being composed of two circular heads connected by inclined partitions, as described, forming open-ended chutes therein, the endless cable provided with flint-glass buckets, and mechanism, substantially as described, for operating said wheel, cable, and buckets, as set forth.

4. The combination, with the feed-bin having a central feed-chute connected therewith, and an armed wheel having grooves in the ends of its arms in said feed-bin, the receiving-bin having a central discharge-hopper, and a wheel having open-end chutes between its heads in the receiving-bin, of the pipe-legs connecting said feed-bin and receiving-bin, and the endless cable resting in the grooved arms of the wheel in the feed-bin and the grooves in the outer ends of the partitions in the chute-wheel, and the flint-glass buckets secured centrally to the endless cable, as set forth.

5. The combination, with the metal feeding-bin and the metal receiving-bin, of the flint-glass tubing connecting said bins and forming the elevator-legs, substantially as specified.

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

RICHARD HENRY EVERETT.

Witnesses:

CHARLES H. WOODRUFF,
DENHAM TOWNER.