(No Model.) 2 Sheets—Sheet 1.

C. SEESSLE.

AUTOMATIC GRAIN WEIGHING APPARATUS.

No. 317,220. Patented May 5, 1885.

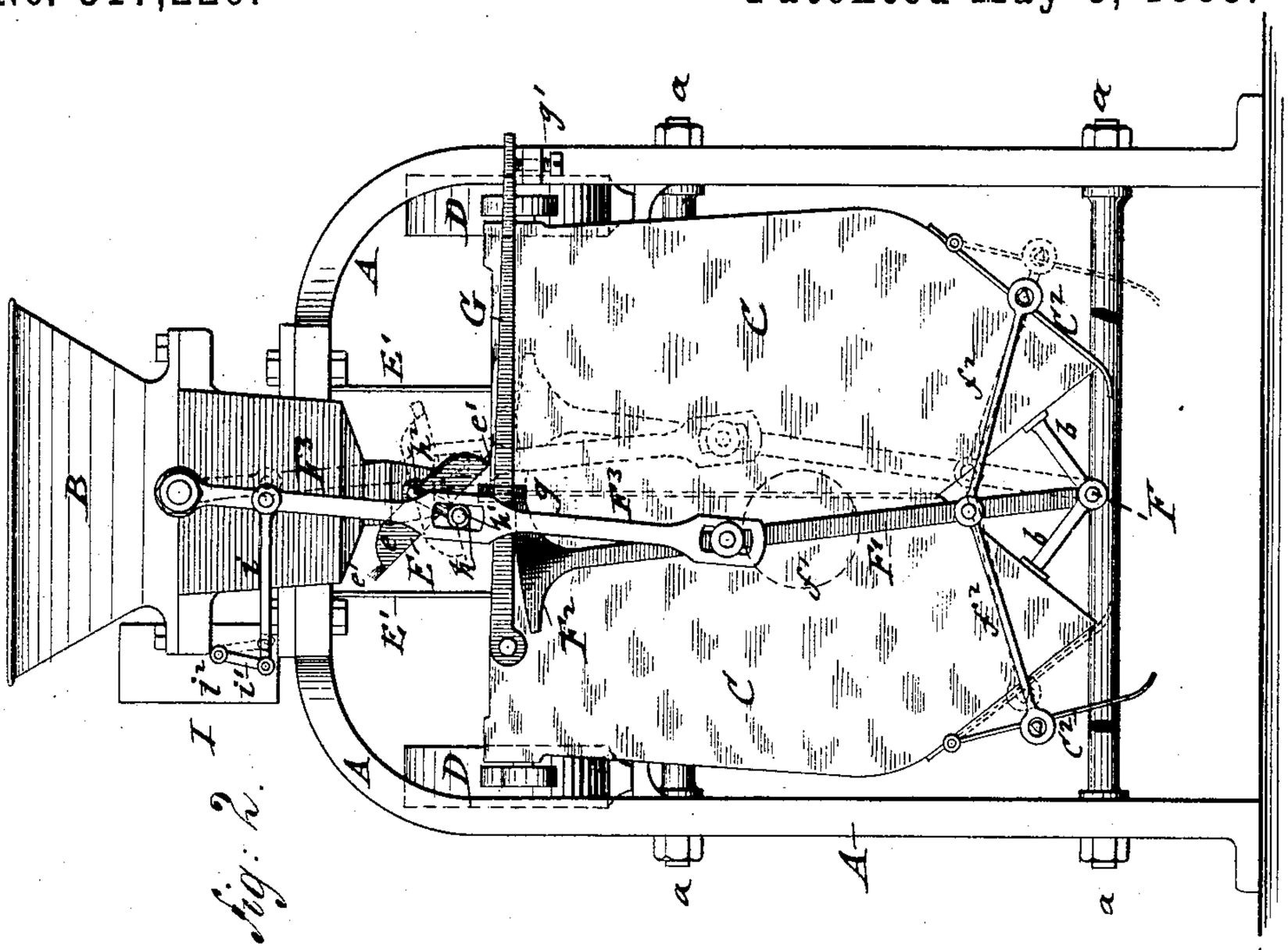

Fig. 2.

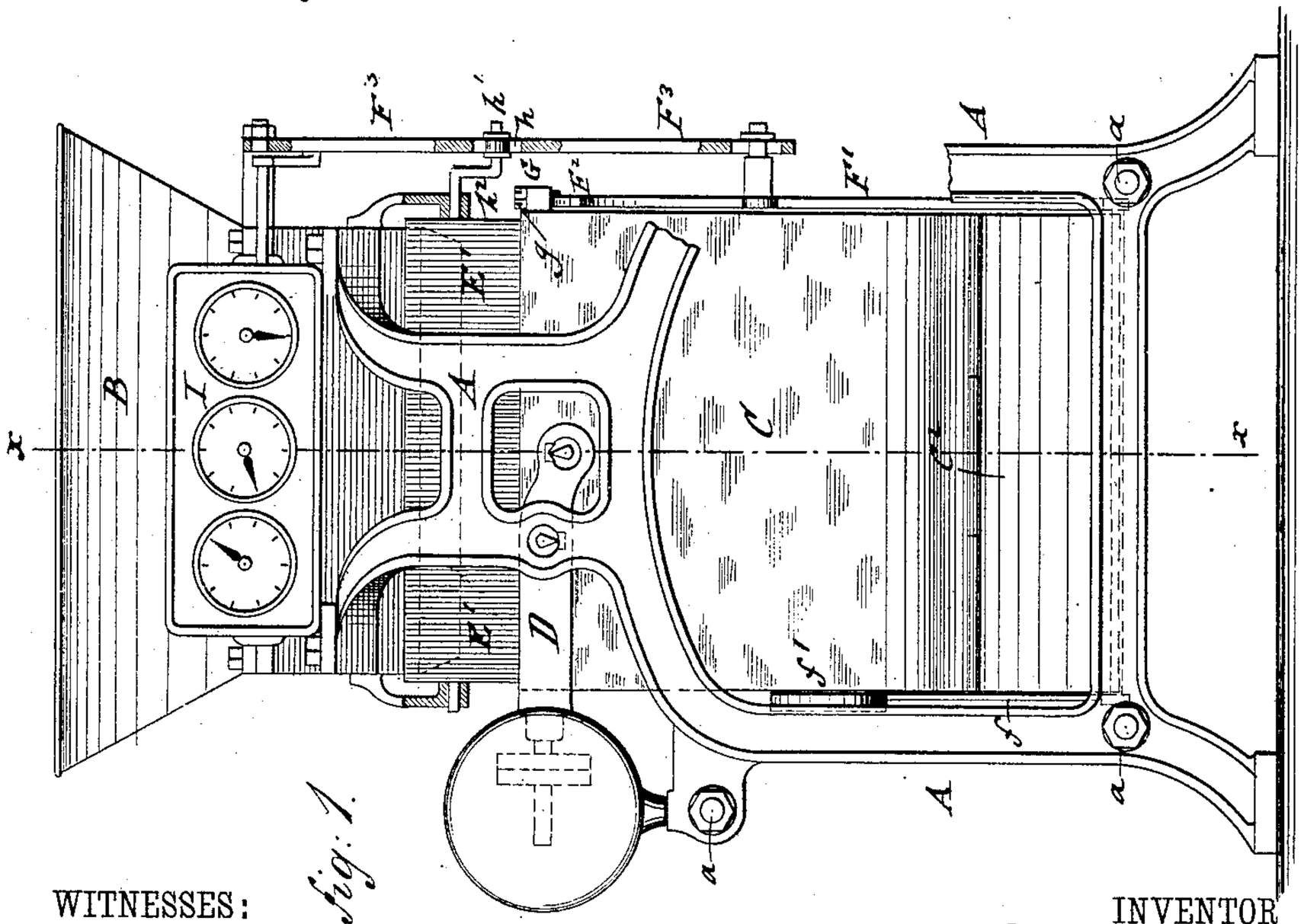

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

C. SEESSLE.

AUTOMATIC GRAIN WEIGHING APPARATUS.

No. 317,220. Patented May 5, 1885.

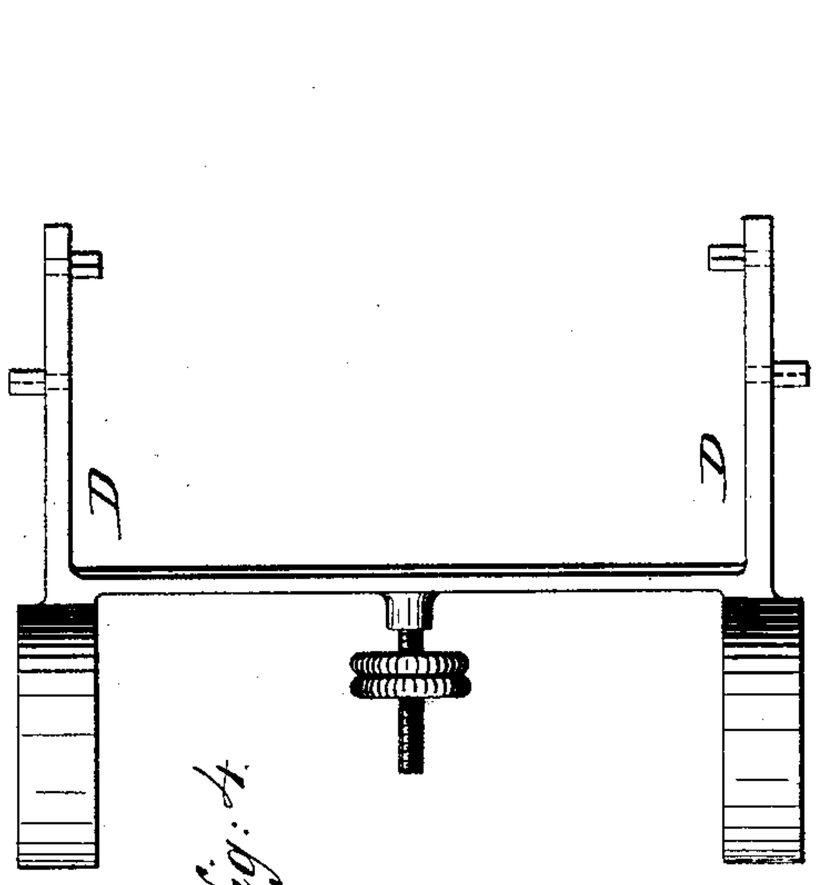

Fig. 4.

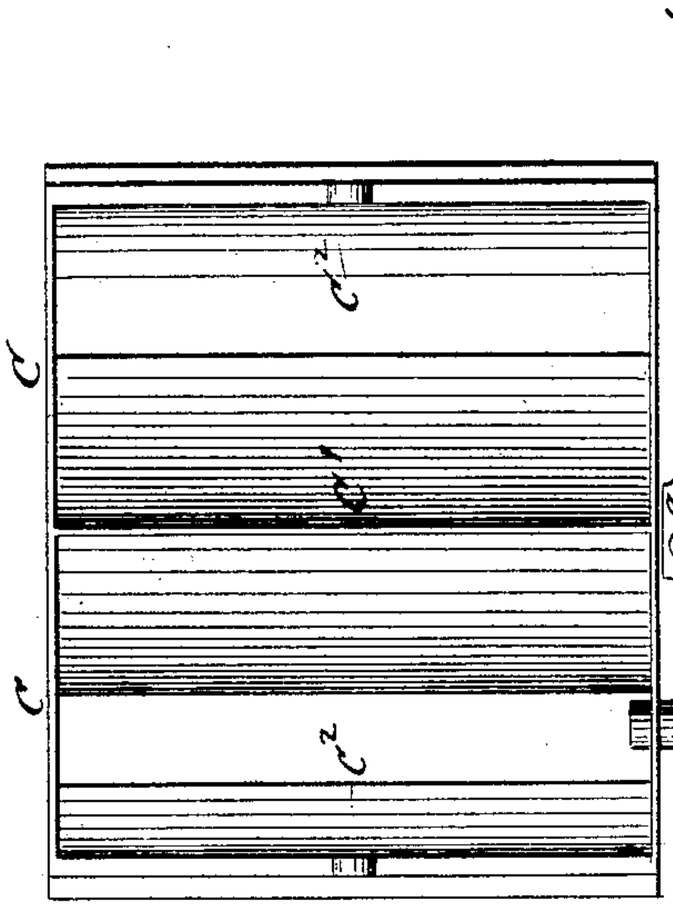

Fig. 5.

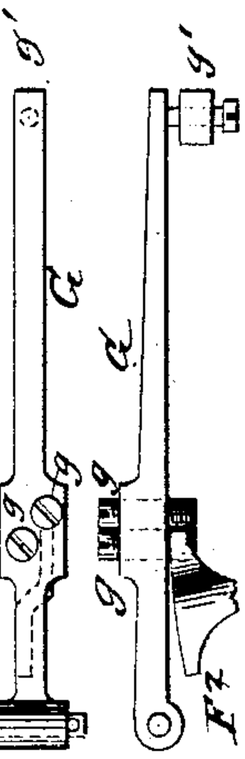

Fig. 6.

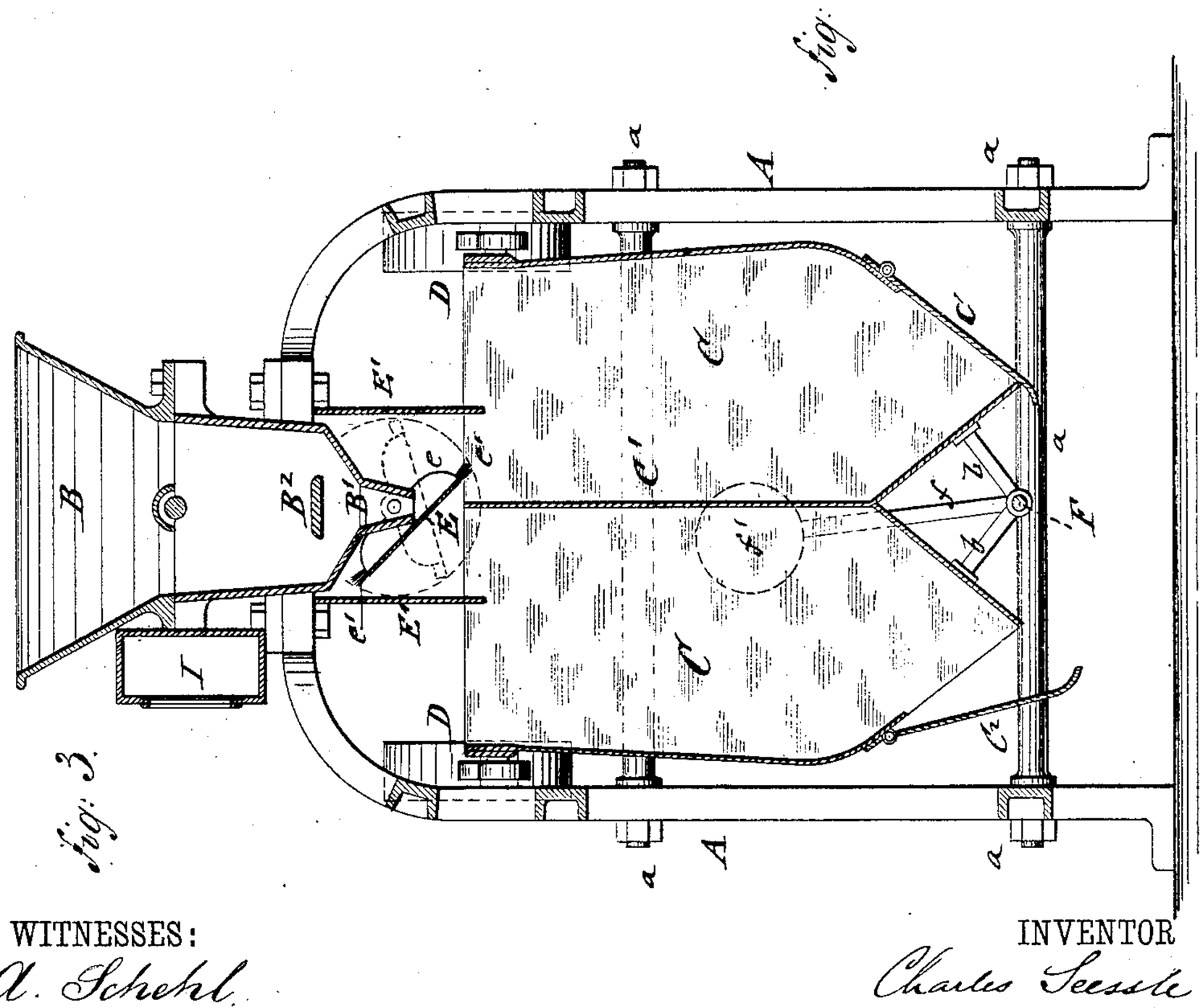

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES SEESSLE, OF NEW YORK, N. Y., ASSIGNOR TO THE NEW YORK AUTOMATIC SCALE COMPANY, OF SAME PLACE.

AUTOMATIC GRAIN-WEIGHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 317,220, dated May 5, 1885.

Application filed March 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SEESSLE, of the city, county, and State of New York, have invented certain new and useful Improvements in Automatic Grain-Weighing Apparatus, of which the following is a specification.

This invention relates to an improved apparatus for automatically weighing grain and other material; and the invention consists of a hopper having an oscillating discharge-valve and arranged above a centrally-partitioned bucket, which is supported on a scale-beam, and having a separate hinged bottom for each pocket of the bucket. The hinged bottoms of the pockets are opened or closed by an oscillating arm connected to the bottoms by pivot-links. The upper T-shaped head of the oscillating arm is engaged in one or the opposite direction by a pivoted lever having two adjustable stop-screws sidewise of each other, said stop-screws releasing the head of the oscillating arm when the bucket is filled with the required quantity of grain. A second oscillating arm is pivoted to the supply-hopper and connected to the lower oscillating arm and to a crank-arm of the discharge-valve, located below the discharge-opening of the hopper, so that the oscillation of the lower arm also oscillates the upper arm and the valve, and conveys the grain on one pocket or the other of the bucket.

In the accompanying drawings, Figure 1 represents a side elevation, partly in section, of my improved automatic grain-weighing apparatus. Fig. 2 is an end elevation, and Fig. 3 a vertical transverse section on line *x x*, Fig. 1; Fig. 4, a detail plan of the scale-beam; Fig. 5, a detail plan of the bucket, and Fig. 6 a side view of the locking mechanism of the bucket.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A A represent the supporting-frame of my improved automatic grain-weighing apparatus, which frame is rigidly connected by transverse bolts *a a*.

To the upper part of the supporting-frame A is attached a supply-hopper, B, through which the grain is conveyed to the bucket C, that is hung to knife-edged supports at the outer ends of a weighted scale-beam, D, which is fulcrumed by knife-edges to bearings of the frame A. The bucket C is made of sheet metal, of suitable strength, and divided by a central vertical partition, C′, into two pockets, which are made hopper-shaped at the bottom, and provided at the outer parts with hinged bottoms C^2 C^2, having curved lower ends.

The lower end of the supply-hopper B is contracted, so as to form a discharge-spout, B′, above which a central horizontal diaphragm, B^2, is located by which the grain is divided in its downward flow and conveyed at both sides of the diaphragm in a uniform manner to the discharge-spout B′, as shown in Fig. 1. To the end walls of the discharge-spout B′ is pivoted by end flanges an oscillating valve, E, which is provided at its edges with bristles that form contact with vertical side walls, E′, when the valve E is in horizontal position, so as to prevent, in this position of the valve, the passage of any grain from the spout B′ to the bucket C. The vertical side walls, E′, extend from the hopper B downward into the pockets at each side of the partition of the bucket C. When the oscillating valve E is moved into inclined position to one side or the other of the central partition of the bucket C, the grain is conveyed from the hopper and spout to either pocket of the bucket, while, when the same is in its horizontal position, the grain is prevented from passing over the valve, so that it chokes the discharge-spout and prevents thereby, in that position, the flowing off of the grain without requiring any other complicated means for interrupting the flow of the grain.

Vertically below the partition C′, and intermediately between the hopper-shaped bottoms of the bucket C, is supported in bracket-bearings *b b* a rock-shaft, F. To one end of the rock-shaft F is attached a fixed upwardly-extending arm, *f*, having a weight, *f′*, at its upper end, while to the other end of the rock-shaft F is attached another upwardly-extending arm, F′, that has a segmental or T-shaped head, F^2, as shown in Fig. 2. The oscillating arm F′ is connected by pivot-links f^2 to knife-

edged pivots of the hinged bottoms C^2, so as to decrease the friction with the same as much as possible. By the oscillating motion of the arm F′ the bottoms C^2 are alternately opened and closed in a positive and reliable manner. The T-shaped head F^2 of the arm F′ is provided with a bend or offset at its middle portion, so that the ends of the same are on different planes, as shown in dotted lines in Fig. 5. The T-shaped head of the arm F′ is locked into inclined position at either side of the partition C′ of the bucket C by means of two stop-screws *g g*, of a lever, G, which lever is pivoted at one end to the end wall of the bucket, and supported at its opposite end by a set-screw, *g′*, on the supporting-frame, A. The stop-screws *g g* are located sidewise to each other, one at each side of the partition of the bucket C, as shown in Fig. 5. One stop-screw *g* of the lever G is located in the same plane with one end of the T-shaped head F^2 of the arm F′, while the other end is located in one plane with the second stop-screw *g* as shown in Fig. 5. The T-shaped head F^2 abuts, therefore, against either stop-screws *g* so as to be retained at one side or the other of the partition of the bucket. The stop-screws *g g*, are vertically adjustable, so as to regulate exactly the release of the head of the oscillating arm from the lever G at the moment when the required quantity of grain has passed to either pocket of the bucket.

To a pivot of the oscillating arm F′ is further connected the slotted lower end of a second oscillating arm, F^3, which is pivoted at its upper end to the end wall of the hopper B, and which is connected by its slotted middle portion, *h*, with an anti-friction roller, *h′*, of a crank-arm, h^2, that forms a part of one of the pivots of the valve E, as shown in Figs. 1 and 2. The upper oscillating arm, F^3, is further connected by a pivot-link, *i*, with the crank-arm *i′* of a shaft, i^2, which latter operates a counter, I, of any approved construction, arranged sidewise of the hopper B, at the upper part of the frame A. By the oscillating motions of the arms F^2 F^3 is produced the alternating opening or closing of the hinged bottoms of the buckets C, and the tilting of the valve E from one side to the other, while by the connection of the upper arm, F^3, with the register the exact quantity of grain that is passed through the bucket and weighed by the same is recorded on the register.

The operation of my improved automatic grain-weighing apparatus is as follows: The grain flows from the supply-hopper through the discharge-spout along the inclined valve to one pocket of the bucket. It fills this pocket until it has received the required quantity of grain, when the weight of the bucket will overcome the weight of the scale-beam, so that the bucket is lowered. The lowering of the bucket also produces the lowering of the oscillating arm F′, so that its upper T-shaped head clears either one of the stop-screws *g* as the lever G is retained by the fixed set-screw *g*. The moment when the T-shaped head F^2 is released from its stop-screw *g* the pressure of the grain on one of the bottoms C^2 of the bucket causes the opening of said bottom, so that the arm F′ is oscillated and the bottom of the other pocket closed. The upper arm, F^3, is oscillated also simultaneously therewith, and the valve E placed in horizontal position by the action of the crank h^2, whereby the flow of grain is interrupted. By the weighted arm *f*, attached to the rock-shaft F, a certain momentum is imparted to the oscillating arm F′, so that when the same is carried over its vertical position to the other side of the partition C′, so as to cause the closing of the hinged bottom of one pocket and the opening of the bottom of the pocket just filled, as shown in dotted lines in Fig. 2, the grain can flow off from the latter. By the simultaneous tilting of the valve the grain flows into the empty pocket while the full pocket is discharged. The T-shaped head F^2 of the oscillating-arm F′ is locked again by the stop-screw *g* of the lever G at the moment when the bucket is returned into raised position by the weight of the scale-beam, so that the arm F′ is retained in inclined position, and thereby one bottom C^2 held in closed position until the grain has filled the second pocket, when the bucket is lowered again and the oscillating-arm F′ swung over to the other side, so as to open the bottom of the pocket just filled while closing the bottom of the empty pocket, and so on alternately, whereby a reliable and effective weighing of the grain passing through the apparatus is obtained.

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

1. In a grain-weighing apparatus, the combination of a scale-beam, a bucket having a fixed central partition and separate hinged bottoms, an oscillating arm having a T-shaped head, pivot-links connecting said arms with the hinged bottoms, a stop-lever pivoted at one end to the bucket and retained at the other end by a fixed set-screw, and adjustable stop-screws arranged sidewise on the lever, said stop-screws engaging either end of the T-shaped head for locking the arm in inclined position at either side of the central partition, substantially as set forth.

2. The combination, in a grain-weighing machine, of a scale-beam, a bucket having a central partition and separate hinged bottoms, a rock-shaft vertically below the partition, an oscillating arm having a T-shaped head attached to one end of the rock-shaft, a weighted arm attached to the other end of the rock-shaft, pivot-links connecting the oscillating arms with the hinged bottoms, and a lever pivoted to the bucket and having stop-screws that engage or release the T-shaped head of the oscillating-arm, substantially as set forth.

3. The combination, in a grain-weighing apparatus, of a scale-beam, a bucket having a central partition and separate hinged bot-

toms, an oscillating arm, pivot-links connecting the oscillating arms with the hinged bottoms, means for locking or releasing the oscillating arm, a supply-hopper having a discharge-spout, an oscillating valve below the discharge-spout, an upper oscillating arm pivoted to the hopper, the lower oscillating arm, and the crank-arm of the valve, whereby the valve is tilted simultaneously with the lowering of the bucket and opening of one of the bottoms, substantially as set forth.

4. In a grain-weighing machine, the combination of a scale-beam, a bucket having a central partition and hinged bottoms, a supply-hopper having a discharge-spout, an oscillating valve below the discharge-spout, vertical side walls extending from the hopper into the upper part of the bucket, an upper oscillating arm pivoted to a crank-arm of the valve, a lower oscillating arm pivoted to the upper arm and connected to the hinged bottoms, and a stop-lever having stop-screws for releasing or locking the lower oscillating arm, so as to cause the tilting of the supply-valve by the motions of the oscillating arms, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses.

CHARLES SEESSLE.

Witnesses:
PAUL GOEPEL,
CARL KARP.