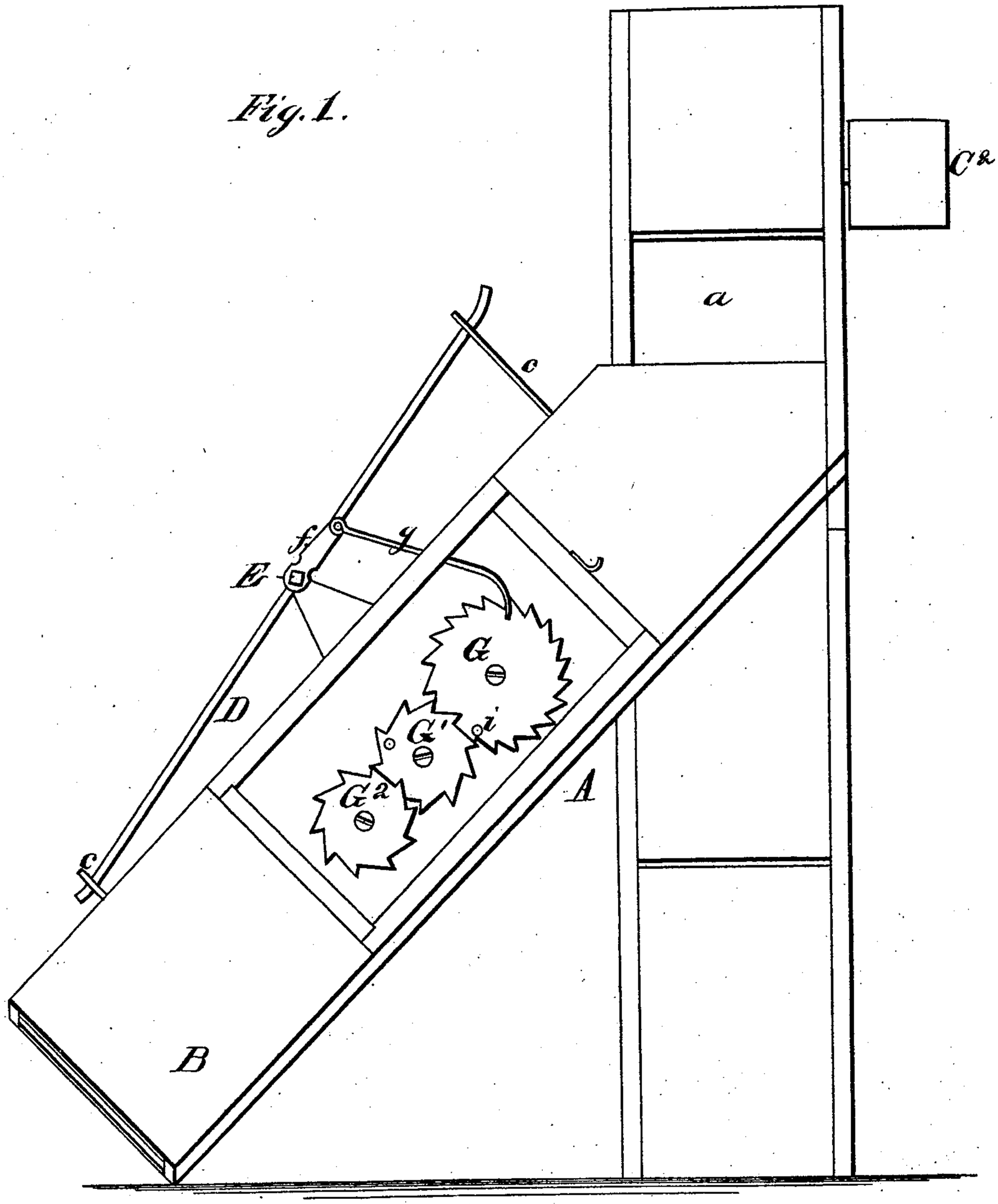
2 Sheets—Sheet 1.

J. M. HARPER.

GRAIN-ELEVATOR AND MEASURES.

No. 184,616. Patented Nov. 21, 1876.

Fig. 1.



WITNESSES

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2 Sheets—Sheet 2.

J. M. HARPER.

GRAIN-ELEVATOR AND MEASURES.

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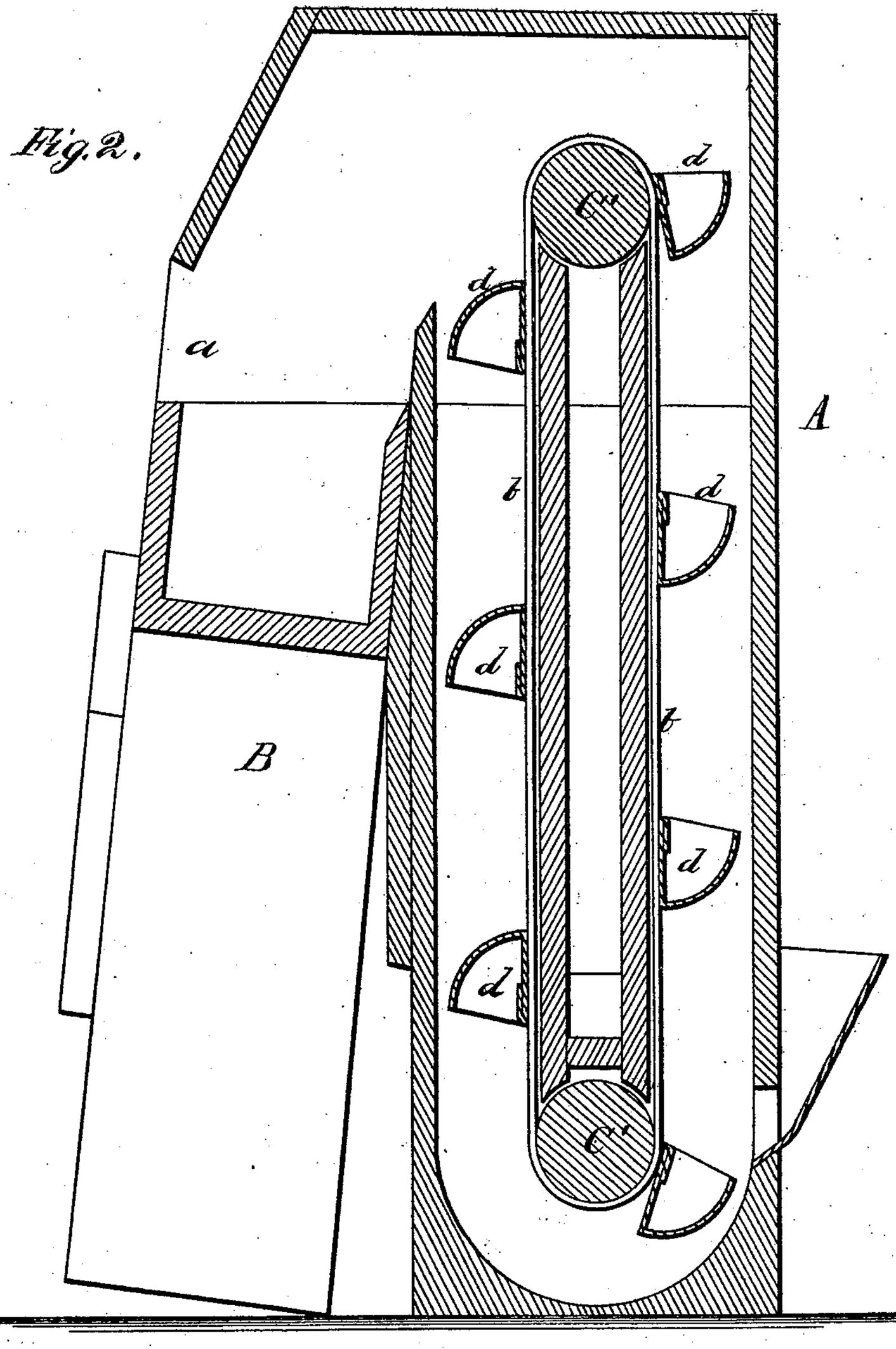
Fig. 2.



WITNESSES

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Chipman, Bowen & Co.
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by Gilmore, Smith & Co.

UNITED STATES PATENT OFFICE.

JAMES M. HARPER, OF EL PASO, ILLINOIS.

IMPROVEMENT IN GRAIN ELEVATORS AND MEASURES.

Specification forming part of Letters Patent No. **184,616,** dated November 21, 1876; application filed March 18, 1876.

To all whom it may concern:

Be it known that I, JAMES M. HARPER, of El Paso, in the county of Woodford and State of Illinois, have invented a new and valuable Improvement in Grain Elevators and Measurers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my grain elevators and measurers, part sectional; and Fig. 2 is a vertical section of the same.

This invention has relation to means for elevating grain from a thrashing-machine and measuring it; and the nature of my invention consists in the novel construction and arrangement of the parts, as will be hereinafter explained.

In the annexed drawings, A represents a trunk, which is vertically divided, and provided near its lower end with a hopper, and an opening, *a*, near its lower end. Inside of this trunk is an endless belt, *b*, which passes around two pulleys, *c* c^1, and has attached to it, at suitable distances apart, cups or buckets *d*. The shaft of the upper pulley c^1 has a drum, c^2, keyed on it, around which a belt passes, that receives motion from a pulley on the thrashing-machine. The buckets or cups *d* receive the grain as it comes from the thrashing-machine, and elevate it to the upper end of the trunk A, and discharge it into an inclined trunk, B. C C are two cut-off valves, which are free to slide in kerfs made in the trunk B, and which are arranged at such a distance from each other that they will measure the grain by half-bushels. These cut-off valves C C are loosely attached to a vibrating lever, D, fixed to a rock-shaft, E, which is applied in bearings on the outside of the trunk B. One end of the shaft E has an arm, *f*, secured to it, to the free end of which a pawl, *g*, is pivoted, which engages with ratchet-teeth on a wheel, G. At every discharge of grain from the trunk B the pawl moves the wheel G the distance of one tooth, registering half-bushels, and when the wheel G has made one revolution a stud, *i*, on its face will move a wheel, G^1, a distance equal to the length of one of its teeth. In like manner wheel G^1 will move another wheel, G^2.

The registering-wheels are all inclosed in a case having a glass face.

The cut-off valves are actuated by the attendant, who may discharge the measured grain directly into a wagon or into bags.

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

In a combined grain elevator and measurer, the cut-off valves C C, loosely attached to a vibrating lever, D, fixed to a rock-shaft, E, provided with the arm *f* and pivoted pawl *g*, in combination with the ratchet-wheel G of the registering mechanism, all constructed and arranged as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES M. HARPER.

Witnesses:

GEORGE E. UPHAM,

WALTER C. MASI.