

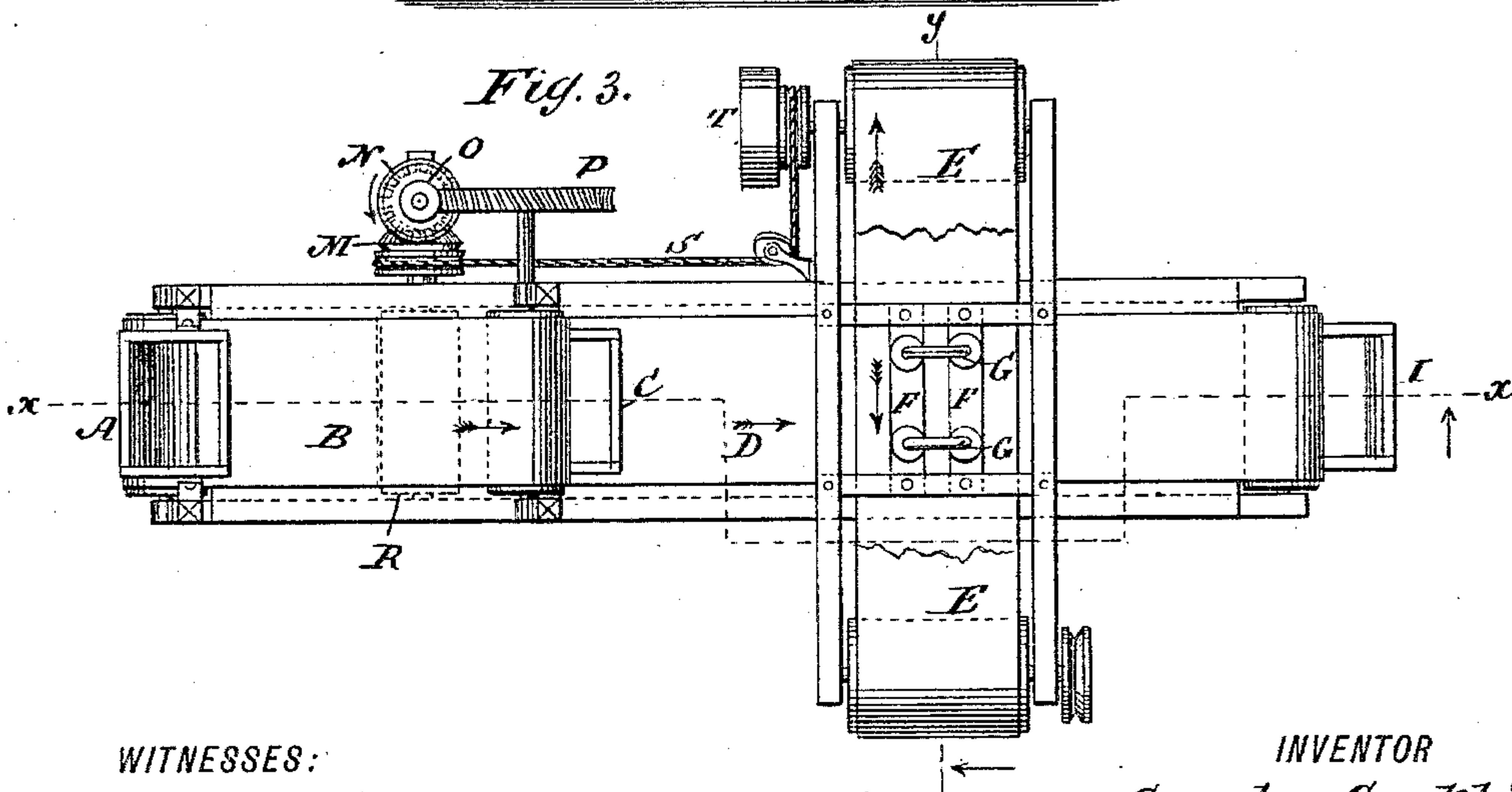
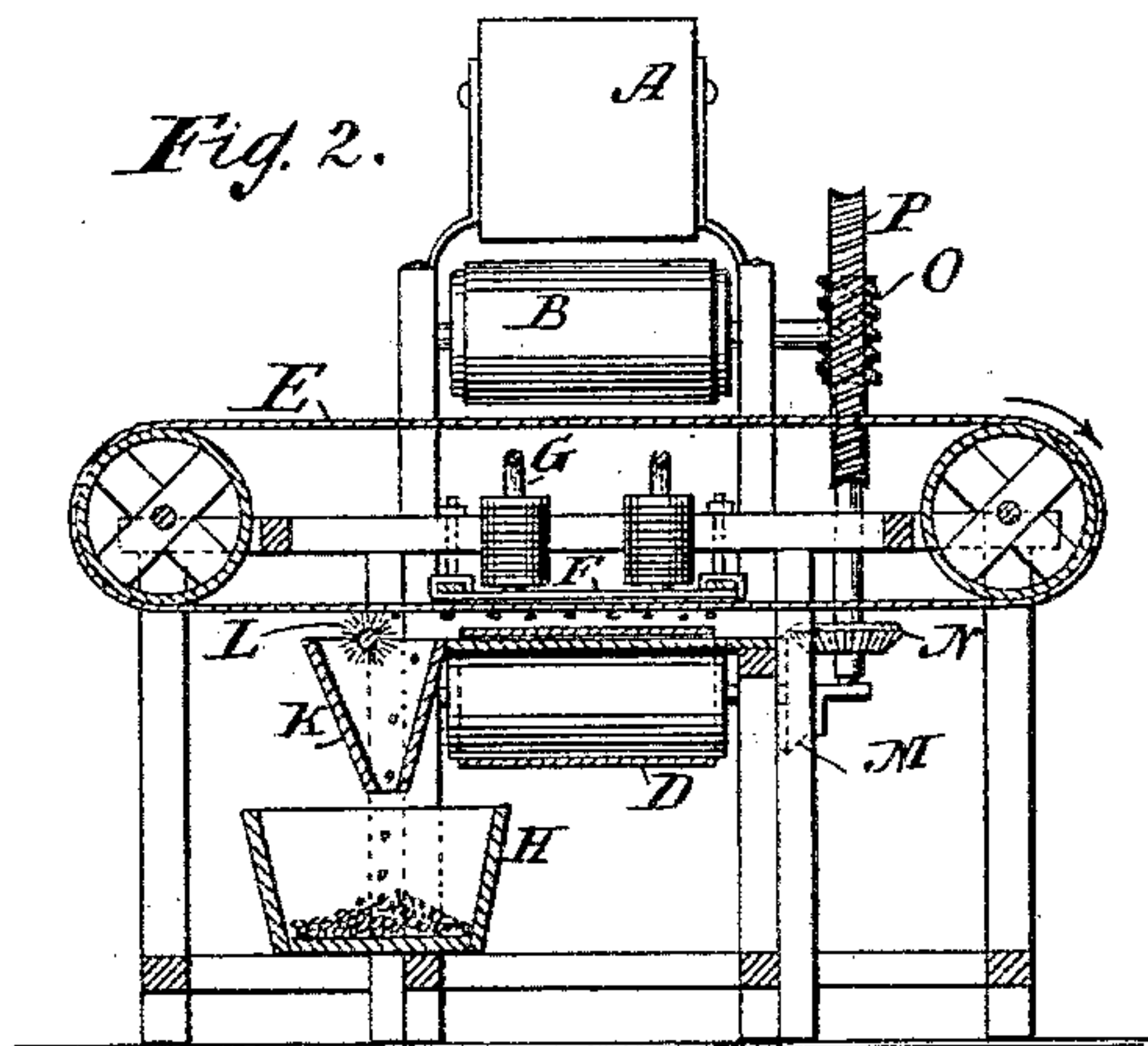
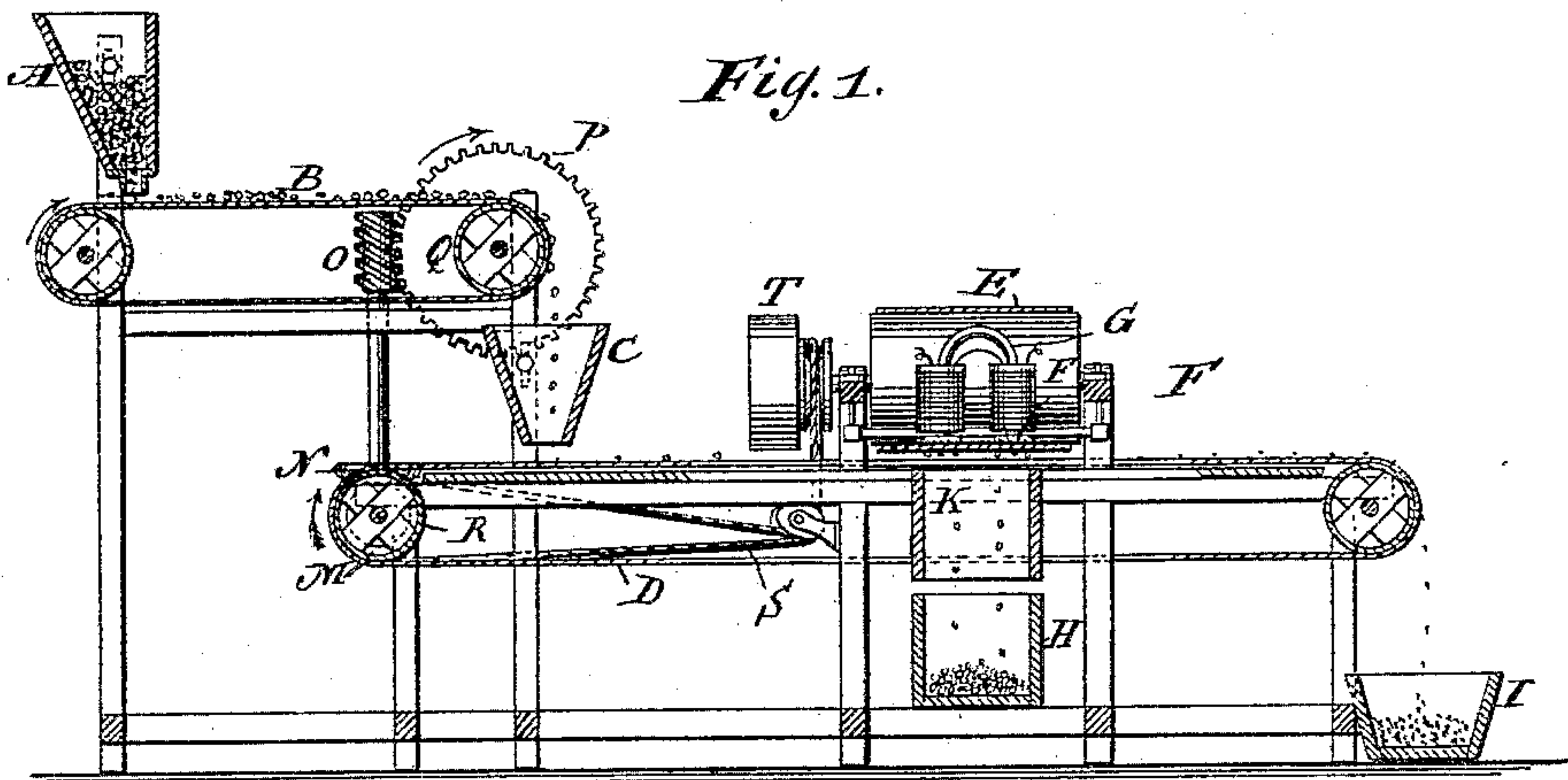
(No Model.)

2 Sheets—Sheet 1.

G. CONKLING.
MAGNETIC SEPARATOR.

No. 401,415.

Patented Apr. 16, 1889.



WITNESSES:

Eduard Wolff.
William Miller

INVENTOR

Gurdon Conkling.

BY

Van Santvoord & Hauff

ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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MAGNETIC SEPARATOR.

No. 401,415.

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Fig. 4.

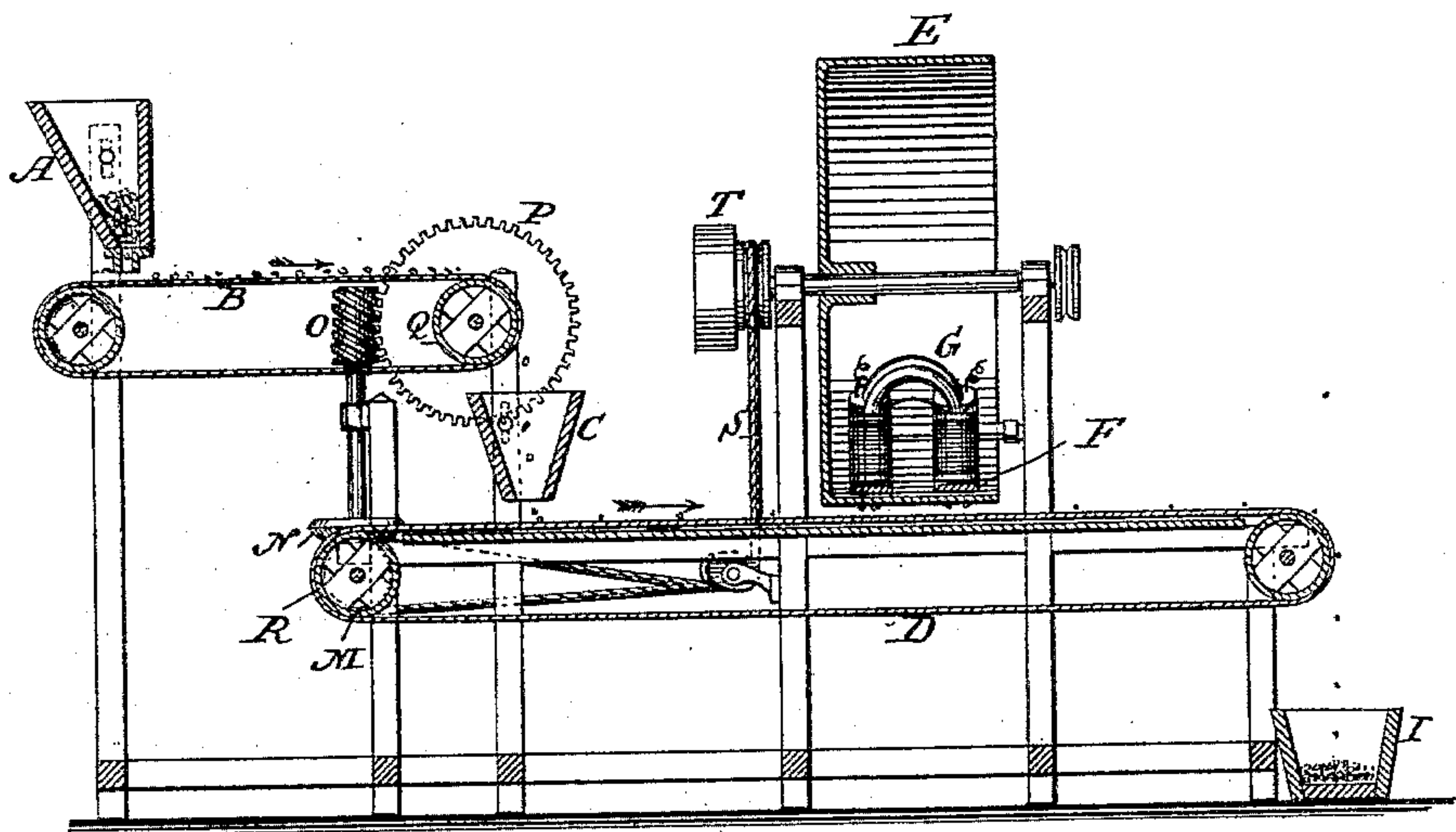


Fig. 5.

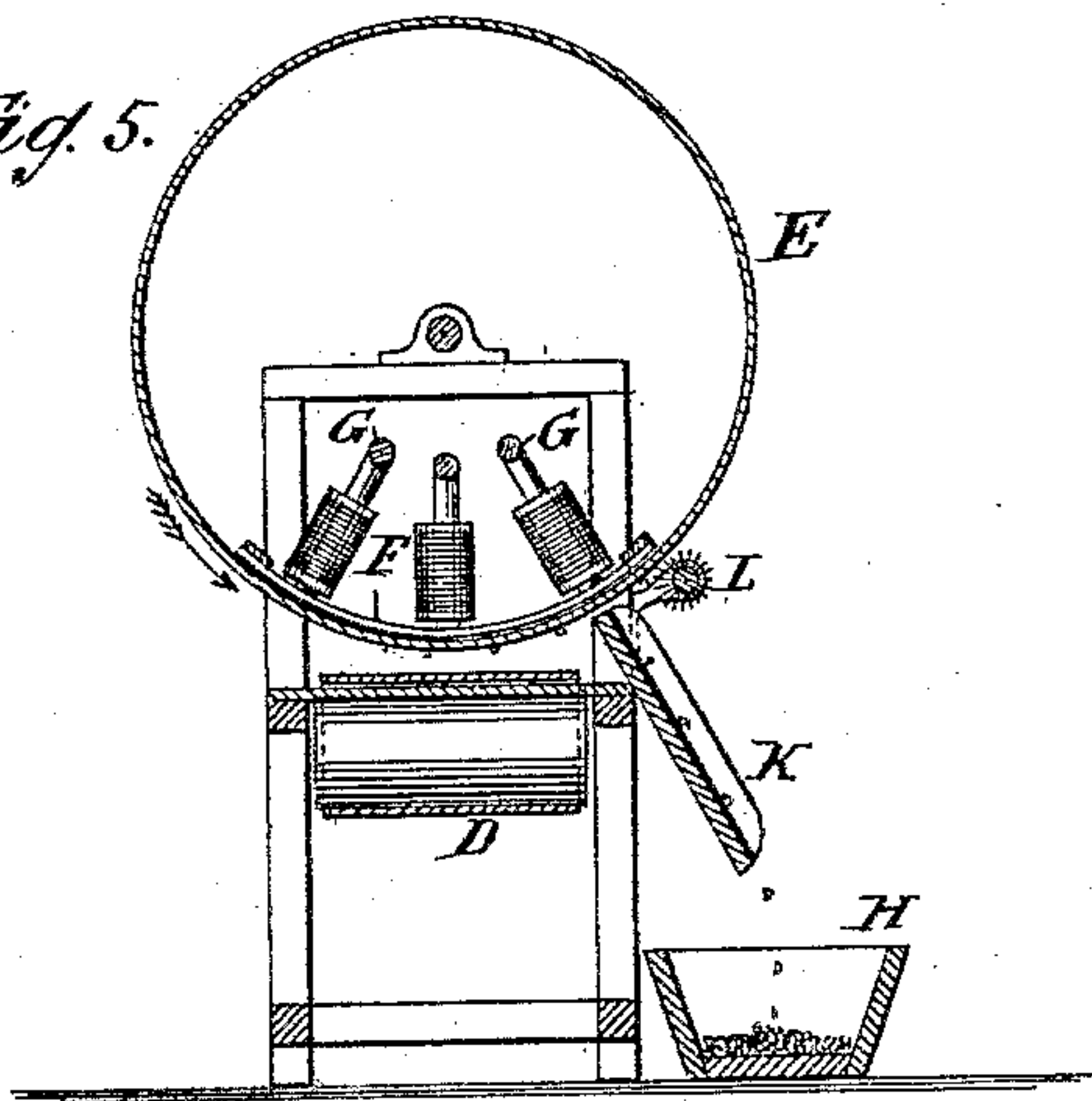
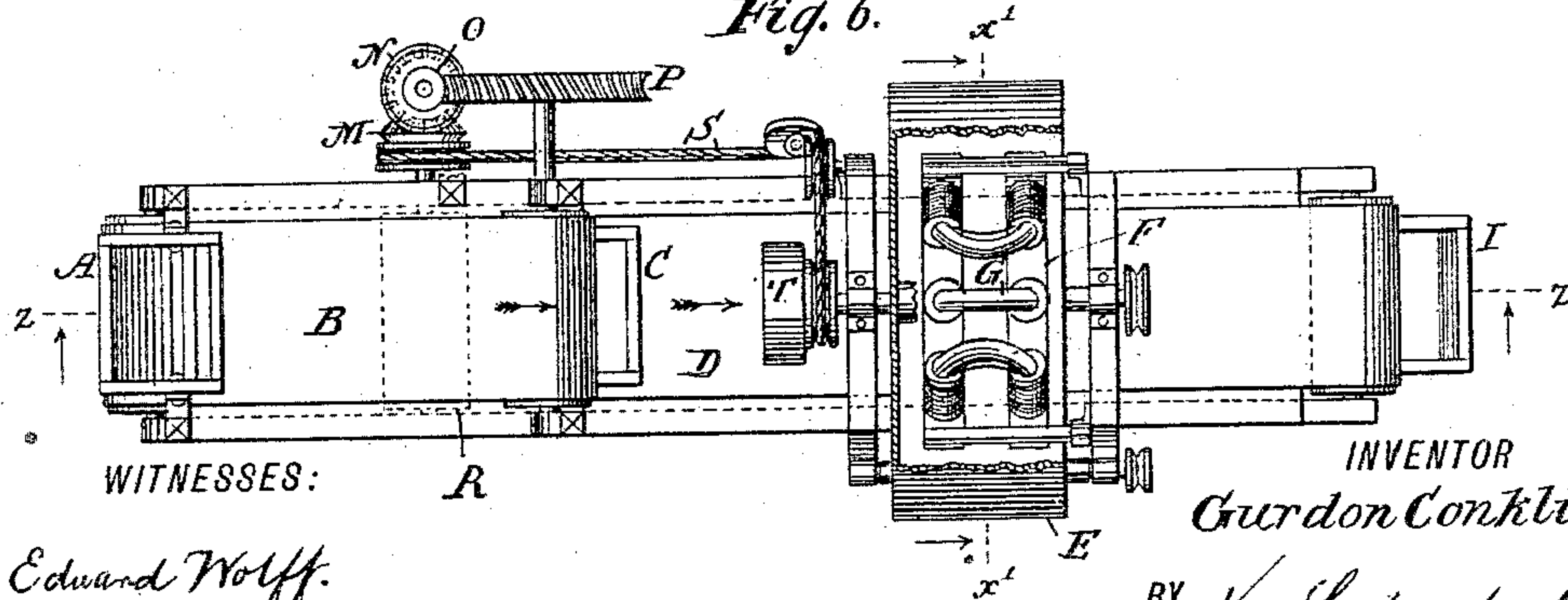


Fig. 6.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GURDON CONKLING, OF GLENS FALLS, NEW YORK.

MAGNETIC SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 401,415, dated April 16, 1889.

Application filed August 9, 1888. Serial No. 282,365. (No model.)

To all whom it may concern:

Be it known that I, GURDON CONKLING, a citizen of the United States, residing at Glens Falls, in the county of Warren and State of New York, have invented new and useful Improvements in Magnetic Separators, of which the following is a specification.

This invention relates to an improvement in that class of magnetic separators which I have described in Letters Patent No. 383,863, granted to me June 5, 1888, such improvement being set forth in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section in plane $x x$, Fig. 3. Fig. 2 is a transverse section in the plane $y y$, Fig. 3. Fig. 3 is a plan or top view. Fig. 4 shows a section of a modification in plane $z z$, Fig. 6. Fig. 5 is a section in plane $x' x'$, Fig. 6. Fig. 6 is a plan view.

Similar letters indicate corresponding parts.

In the drawings, the letter A indicates a hopper by which crushed or comminuted ore is fed to the feed-conveyer B, whence the ore is fed by the hopper C to the carrying-conveyer D, which carries the ore from the hopper C toward the transverse movable diaphragm E. The magnet F, which may be either a permanent magnet or a plate magnetized by an electro-magnet, G, causes the iron particles to adhere to the movable diaphragm E, which diaphragm carries the iron particles toward the receptacle H, into which said particles drop. The particles of ore not attracted by the magnet pass on into the receptacle I. A hopper, K, guides the iron particles into the receptacle H, and a brush, L, tends to separate the iron particles from the diaphragm E.

The feed-conveyer B and carrying-conveyer D travel at different velocities. By having, for example, the carrying-conveyer D travel one hundred times faster than the feed-conveyer, the ore which is fed by the feed-conveyer

onto the carrying-conveyer is spread over the carrying-conveyer in a very thin layer, so that the iron particles are thoroughly exposed to the action of the magnet F as the carrying-conveyer brings said iron particles toward the magnet. Suitable mechanism is applied for moving the feeding and carrying conveyers each at different velocities.

By applying to one of the rollers R of the carrying-conveyer a bevel-gear, M, and by providing the bevel-gear N, which gears into said gear M, with a worm, O, engaging a worm-wheel, P, communicating with a roller, Q, of the feed-conveyer B, then the feed-conveyer will be made to travel slower than the carrying-conveyer D. The rollers R, or one of them, as also the diaphragm E, may be actuated by any suitable well-known source of power. A belt, S, and pulley T are shown in the drawings adapted to actuate the movable diaphragm E and a roller R.

The movable diaphragm E may be variously formed. For example, in Figs. 1, 2, and 3, the movable diaphragm is shown in form of a belt traveling over rollers.

In Figs. 4, 5, and 6 the movable diaphragm E is shown in form of a revolving drum.

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

The combination, with the carrying-conveyer D, the movable diaphragm E, and the magnet F, of the feed-conveyer B, which moves at a different velocity from that of the carrying-conveyer, and mechanism, substantially as described, for moving the feed and carrying conveyer each at the required velocity.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

GURDON CONKLING. [L. S.]

Witnesses:

J. VAN SANTVOORD,
E. F. KASTENHUBER.