

(No Model.)

H. COOK.
AMALGAMATOR.

No. 362,363.

Patented May 3, 1887.

Fig. 2.

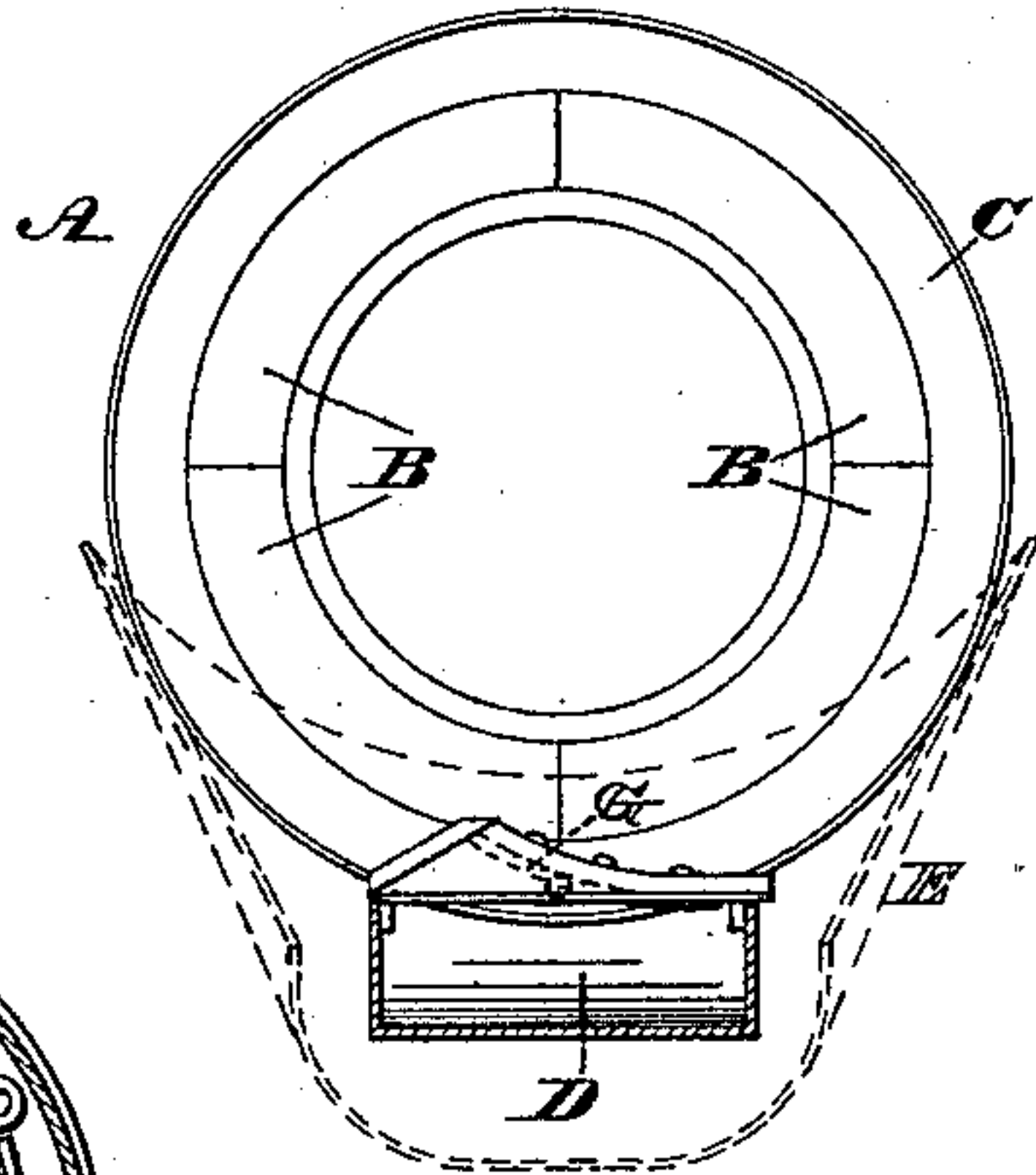


Fig. 4

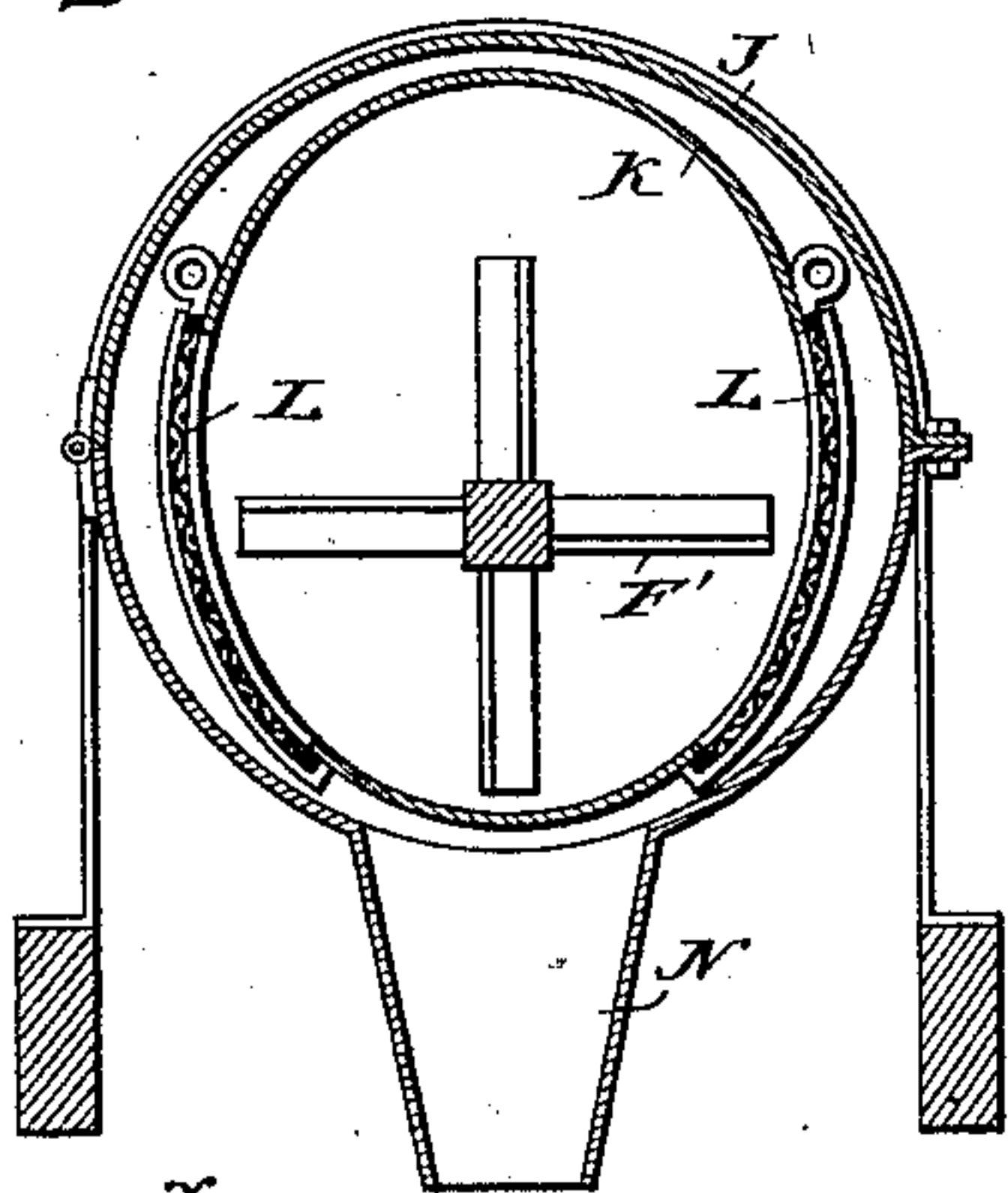


Fig. 1

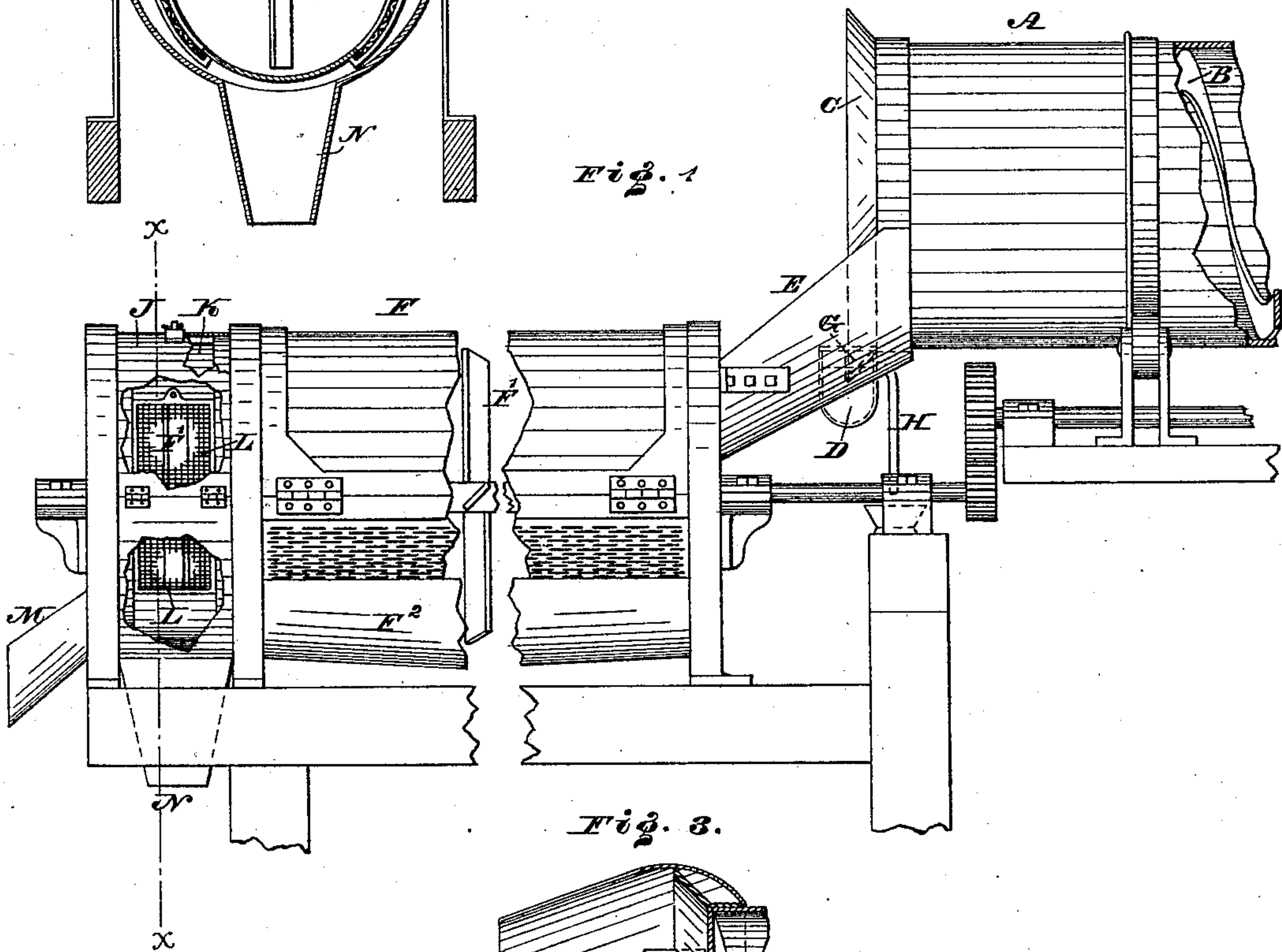
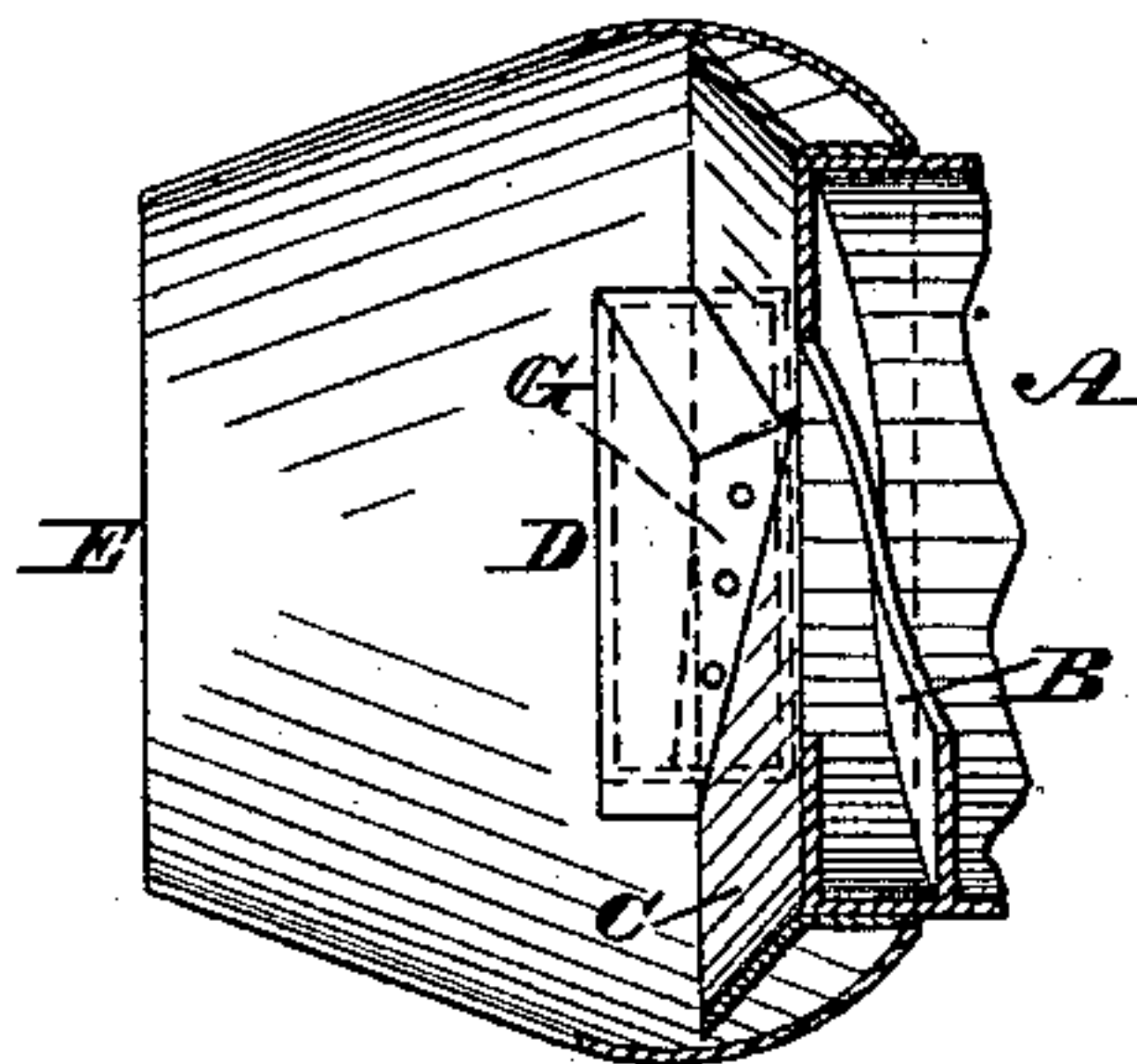


Fig. 3.



WITNESSES:

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AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 362,363, dated May 3, 1887.

Application filed May 26, 1886. Serial No. 203,272. (No model.)

To all whom it may concern:

Be it known that I, HENRY COOK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Amalgamators, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a side elevation of a portion of an amalgamator embodying my invention. Fig. 2 represents an end view thereof. Fig. 3 represents a horizontal section of a portion thereof. Fig. 4 is a section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of an improvement in an apparatus for separating gold from auriferous earth, with or without the use of water, and taking gold, silver, or other amalgamating minerals from pulverized ores, as will be hereinafter set forth.

Referring to the drawings, A represents a cylindrical or other shaped receiver, which is mounted on a suitable frame or truck and capable of rotation. The receiver is made entirely of copper, or, if preferred, it may have a lining of said metal or any other substance suitable for amalgamating purposes, and contains spiral flanges B, of iron or other suitable metal.

At the discharge end of the receiver is an outwardly-projecting flange or flaring rim, C, which dips into a mercury-bath, D, the latter being properly supported on a spout, E, which leads from the receiver A into a cylinder, F, which latter I denominate a "mercury-saver," and in most respects is similar to that shown in an application for Letters Patent made by me on or about the 12th of January, 1886. Connected with the mercury-bath is a scraper, G, which is in contact with the inner periphery of the flange or rim C in such manner that when the receiver rotates as the flange rises from the bath it comes in contact with the scraper, thus causing the scraping or removing of the adhering material from the flange, said material dropping into the bath D. The scraper is formed preferably of a piece of rubber, which is secured to a metallic head, the latter being connected with the walls of the

mercury-bath. A pipe, H, is connected with the bath and leads to a suitable receptacle, so that when the bath is overcharged with mercury the latter escapes through the pipe H into said receptacle, the bath thus being relieved and the mercury saved.

The operation is as follows: Mercury is admitted into the receiver, and the rotation of the latter with its flange causes the auriferous earth and mercury to move toward the discharge end of said receiver and the turning and overturning of the same, the particles of minerals coming in contact with the mercury-coated lining or cylinder. The mineral and mercury reach the flange C, and are removed therefrom by the scraper, as has been stated. The earth is carried over the scraper and directed by the spout E into the mercury-saver F, where it is further treated.

The mercury-saver F consists of a copper or other suitable cylinder having its lower portion slotted and provided with a beater, F', which is attached to a rotary shaft, the latter being operated from the gearing of the receiver A.

At the end of the cylinder or saver F is a dust chamber and indicator, J, within which is a cylinder, K, having screens L in its periphery, said screens being removably applied in position, so that when they are not required they may be substituted by solid or closed pieces continuous of the cylinder K, said cylinder K containing a number of the paddles or vanes of the beater F'. At the outer end of the chamber J is a discharge spout, M, for tailings, and below the cylinder K is a spout, N.

The mixed earth and waste mercury or overcharge from the receiver A enters the cylinder or saver F, and is beaten therein and dashed against the inner side of the same. The mercury escapes through the slots of the cylinder F into a trough, F², from whence it may be gathered. The fine particles of dust pass through the screens L and enter the spout N, whereby they may be collected and afterward returned to the amalgamating cylinder or receiver A, the mercury in said dust serving to recharge said receiver.

The cylinder F has its upper part hinged, whereby it may be opened for access to the same for cleansing and other purposes.

The chamber J has also an open top, so that by lifting the same any loss of mercury from the cylinder F may be perceived.

I am aware that amalgamators have been
5 constructed having a receiving-cylinder with a flaring rim, the same being adapted to dip into a recess, and also that scrapers in connection with receiving-cylinders are not new; but the constructions heretofore in vogue, so
10 far as known to me, have the flaring rim at the receiving end of the cylinder, and the recess in which the rim dips is part or a portion of the hopper into which the material is poured, for which reason such construction is not
15 broadly claimed; but in the invention herein described the flaring rim is at the discharge end of the cylinder, and the bath is not a part of the hopper, but secured independently thereof. The scraper is also secured to the
20 walls of the bath, and, as described, is of increased utility and advantage in the device.

I am also aware that in an injector removable circular plates or disks are used; but I am not aware that dust-chambers have been
25 provided with screens adapted to be readily

removed and ones of a different grade easily substituted in place thereof.

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

1. In an amalgamator, a cylinder having an outwardly-flaring rim at its discharge end with means for rotating said cylinder, in combination with a mercury-bath in which said rim dips, and a scraper attached to the walls of said bath and having its free end in contact with the inner periphery of said rim, all substantially as and for the purpose set forth.

2. An amalgamator having a mercury-saving cylinder, a dust-chamber, and a cylinder in said dust-chamber, the latter cylinder having side openings provided with screens or closed pieces, the said screens or closed pieces being removable, all substantially as and for the purpose set forth.

HENRY COOK.

Witnesses:

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