

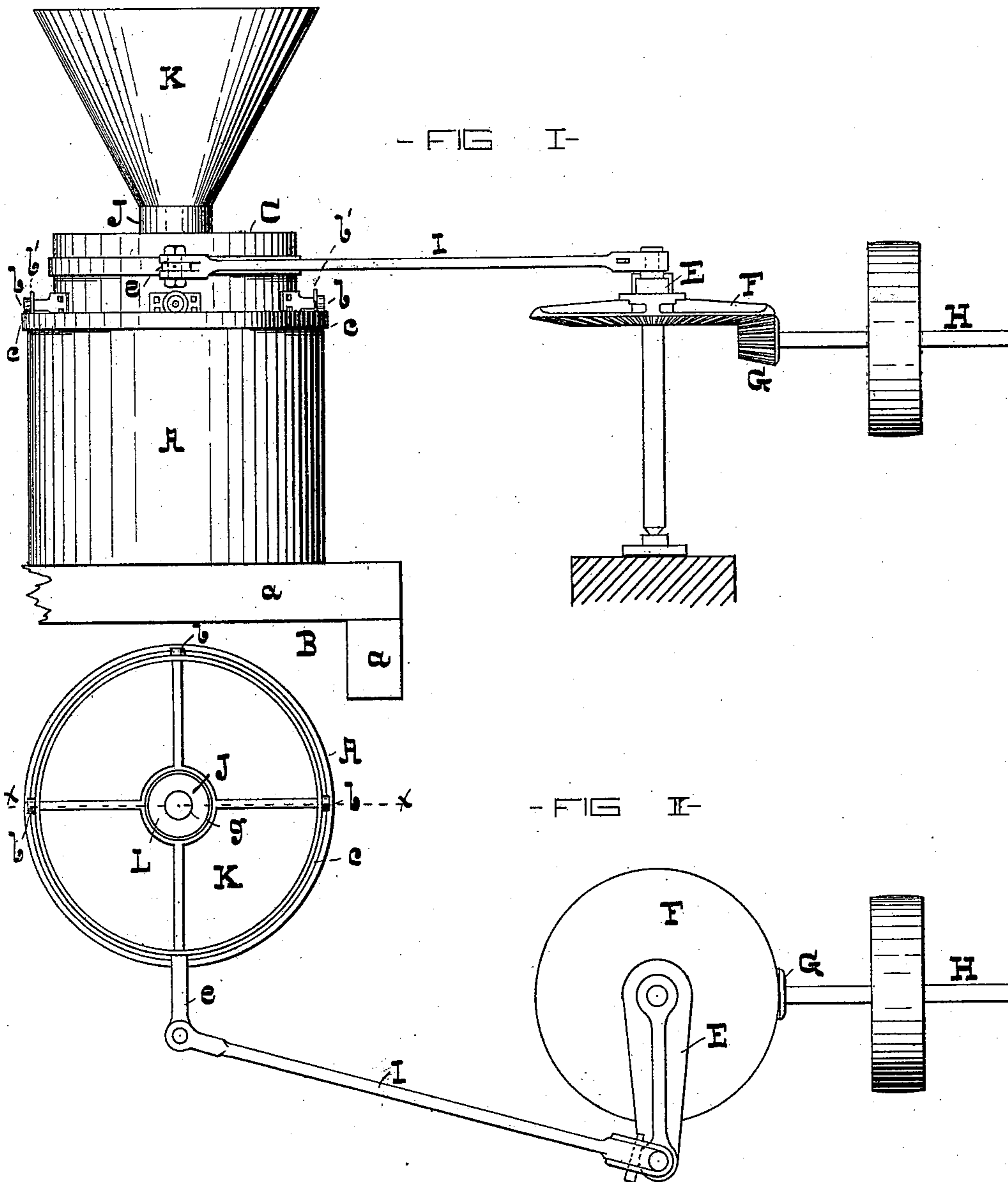
(No Model.)

2 Sheets—Sheet 1.

J. WILKINS.
AMALGAMATOR.

No. 336,970.

Patented Mar. 2, 1886.



-WITNESSES-

Daniel Fisher
C. Wright Arnold

-INVENTOR-

Joseph Wilkins,
by G. H. H. Howard,
Atty.

(No Model.)

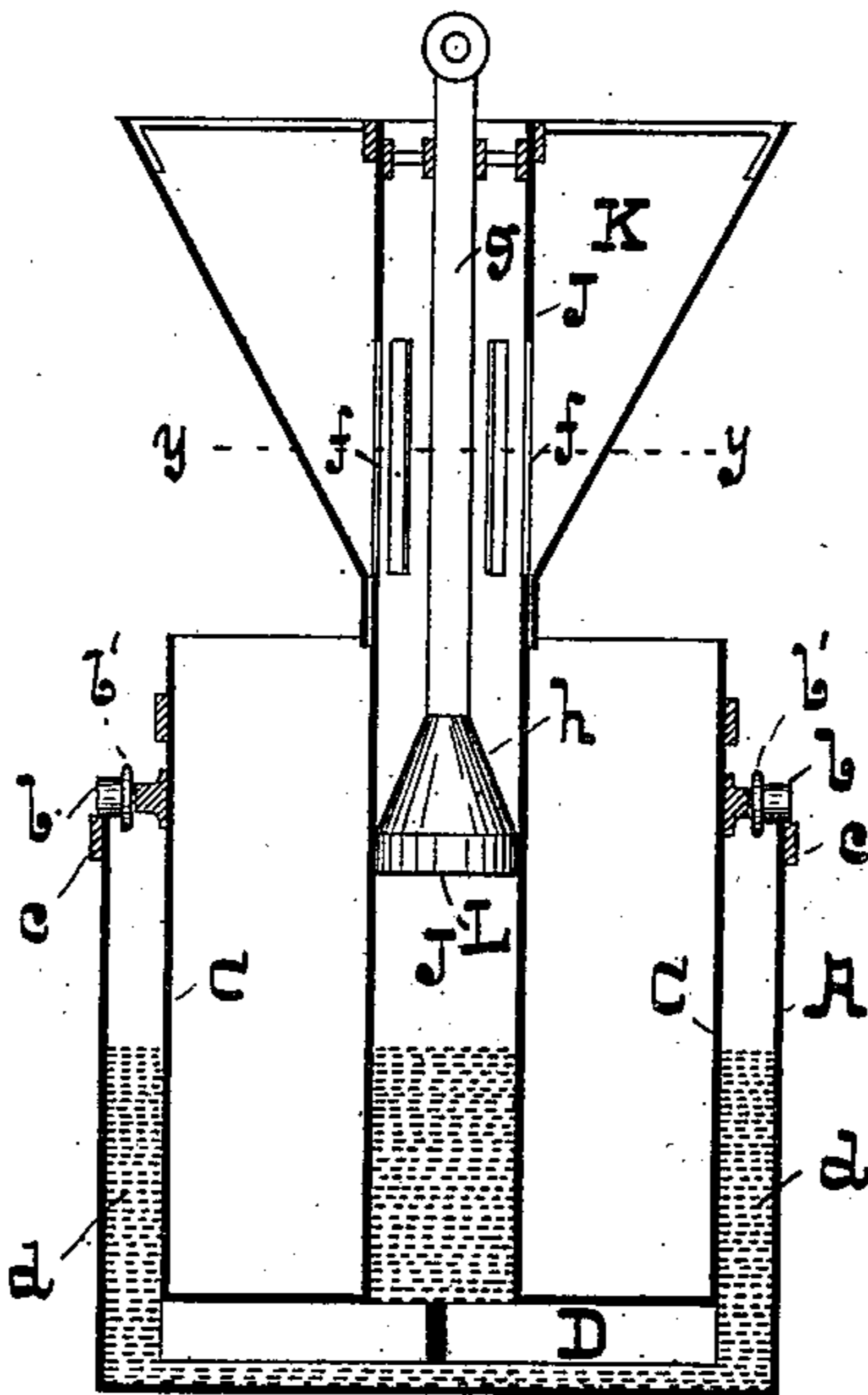
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AMALGAMATOR.

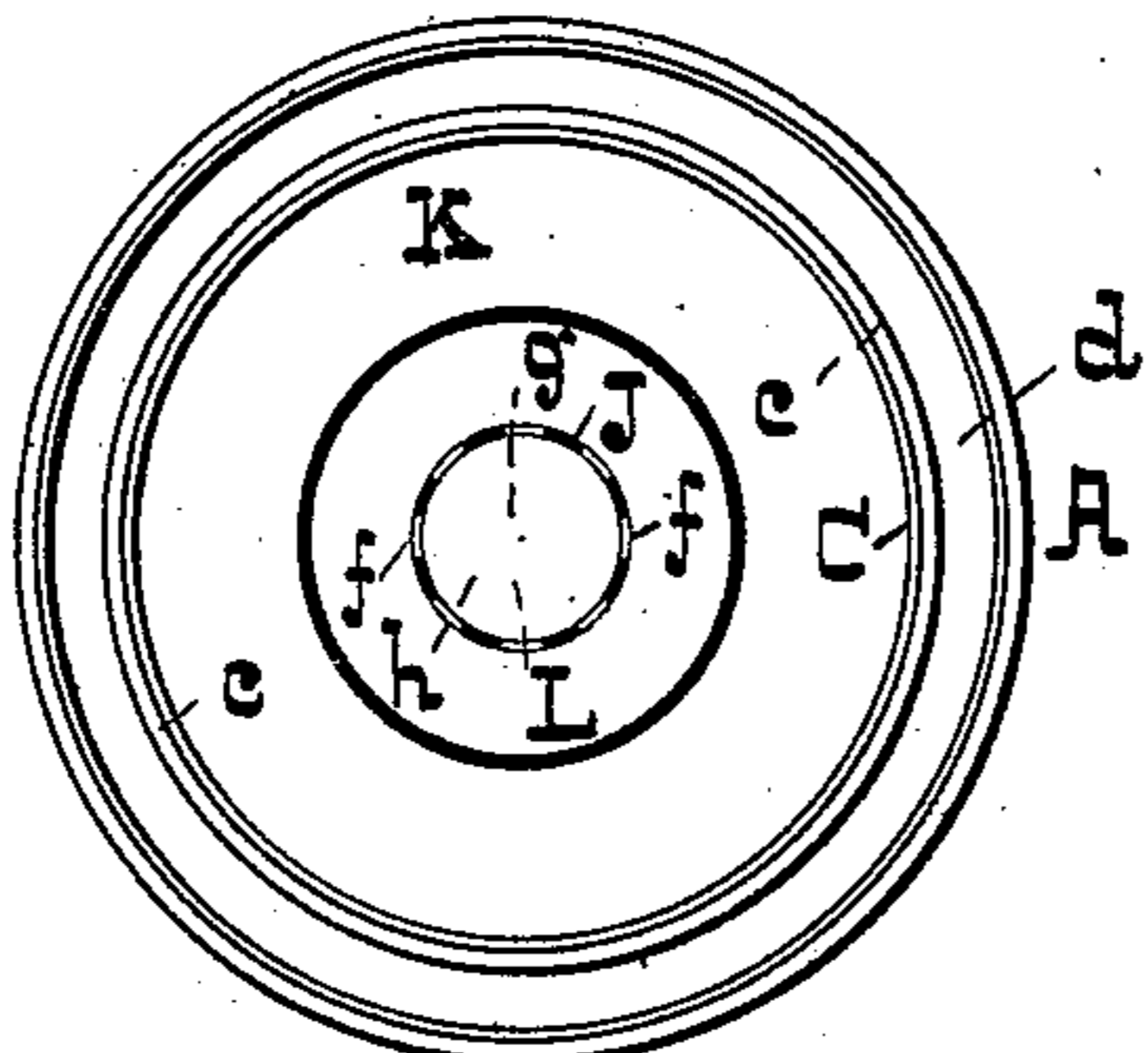
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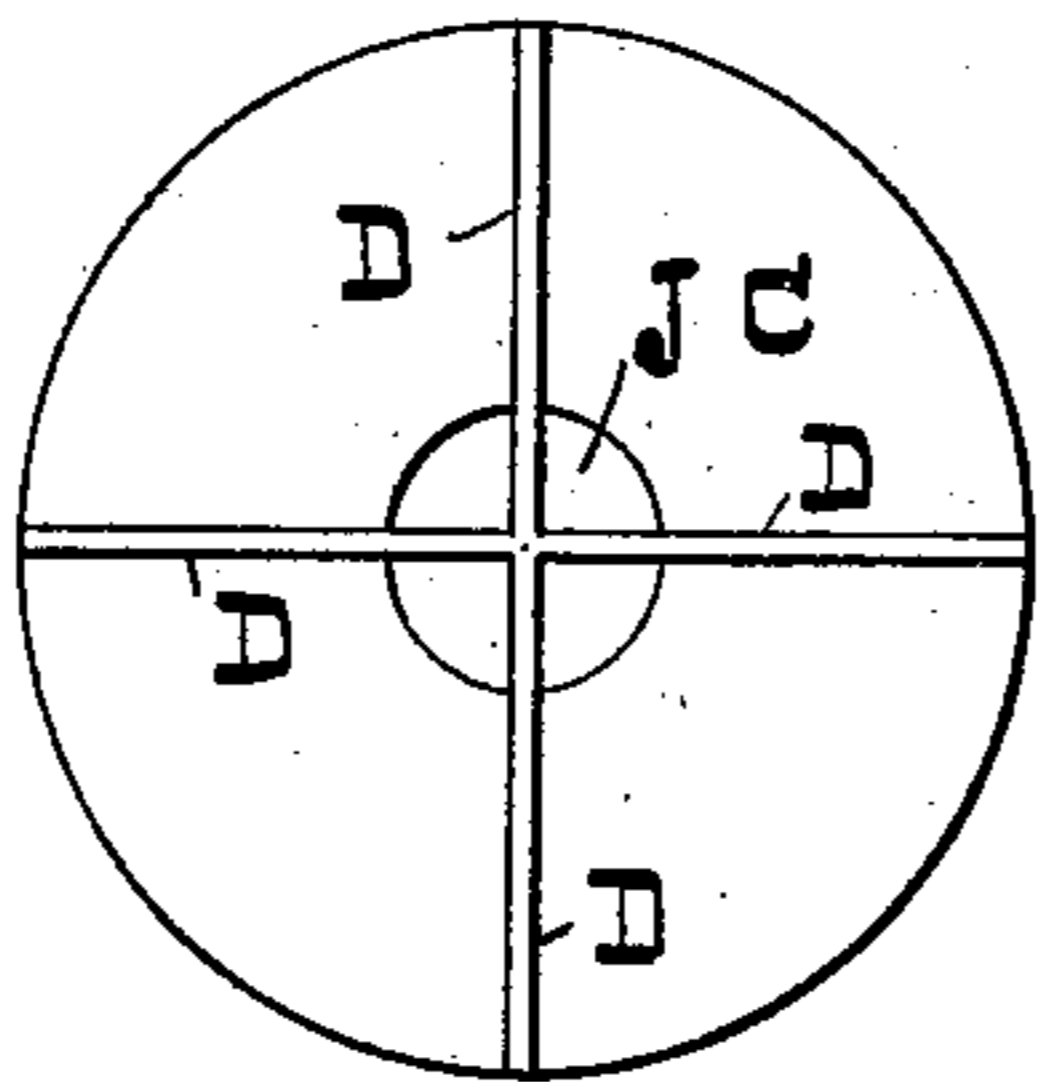
- FIG III -



- FIG IV -



- FIG V -



- WITNESSES -

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UNITED STATES PATENT OFFICE.

JOSEPH WILKINS, OF BALTIMORE, MARYLAND.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 336,970, dated March 2, 1886.

Application filed September 14, 1885. Serial No. 177,037. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WILKINS, of the city of Baltimore and State of Maryland, have invented certain Improvements in Amalgamators, of which the following is a specification.

In the drawings, forming a part hereof, Figure I is a side elevation of the improved amalgamator. Fig. II is a plan of Fig. I. Fig. III is a section of Fig. II, taken on the dotted line *xx*. Fig. IV is a cross-section of Fig. III, taken on the dotted line *yy*. Fig. V is an under side view of a part of the invention.

A is a stationary mercury-holding vessel, preferably cylindrical in shape and made of iron, so as to not amalgamate with the mercury contained therein. This vessel is secured to a suitable foundation, B, which may consist of timbers *a*, as shown; or it can be fastened in a wooden or other box, so that the material discharged from it is caught.

C is an inner iron cylinder, connected to the outer one by means of rollers *b*, which rest on a rim, *c*, on the upper edge of the vessel A. These rollers have flanges *b'*, which are in contact with the inner side of the vessel A, and serve to keep the inner vessel, C, centrally of the one A. By this means of connection the inner vessel, C, is free to rotate, or to be rotated, through the agency of mechanism hereinafter described.

In supporting the inner cylinder from the outer one by means of rollers which are entirely above the surface of the mercury, as shown, I avoid flouring the mercury or separating the same into small globules, as is invariably the case where it is admitted to the frictional surfaces of an immersed shaft and step.

By reference to Fig. III it will be seen that the inner vessel, C, extends to near the bottom of the one A, and is somewhat smaller than it in diameter. The body of mercury is denoted by *d*.

D D are radial wings on the bottom of the inner vessel, C, (see Fig. V,) which is an under side view of the said vessel, which, as the said vessel is partially rotated, served as mixers to thoroughly incorporate the ore with

the mercury when the former is fed to the latter, as hereinafter set forth.

The inner vessel, C, has a partially rotative movement, which is effected by means of a crank, E, driven by gears F and G from a shaft, H, and a connecting-rod, I, uniting the said crank with an arm, *e*, projecting from the side of the vessel C.

J is a pipe extending from the bottom of the vessel C, where it is open to a point above the edge of the said vessel, provided with a funnel-shaped hopper, K. A portion of the pipe J within the hopper K is slotted, (see Figs. III and IV,) the slots being denoted by *f*.

L is a piston adapted to have a vertical reciprocating movement in the pipe J. This piston has a rod, *g*, which connects it with a source of movement, which may consist of a crank or other suitable device. (Not shown in the drawings.) The piston has a conical head, *h*, for purposes hereinafter described, and it is shown in its lowest position in Fig. III. The piston, in its upward stroke, passes to near the top of the slots *f*, and the stroke of the piston is of such length that in its upward movement it passes above the slots *f*.

The hopper being supplied with pulverized ore, and the machine placed in operation, at each stroke of the piston ore passes from the hopper through the slots *f* to under the piston, and is forced by it through the pipe J to the body of mercury through which it rises to the surface.

After the annular space between the inner and outer vessels, and above the mercury, is filled, the ore is discharged over the edge of the outer vessel.

In the treatment of silver, molten lead is substituted for the mercury, and the vessels kept at a proper temperature by the outward application of heat.

I do not claim, broadly, in an amalgamator one vessel supported within another by means of rollers and adapted for rotation, as such an arrangement is not new; but

What I do claim is—

The amalgamator herein described, which consists of the outer vessel, A, the inner ves-

sel, C, having the central pipe, J, and feed-
ing - piston L, the said inner vessel being
supported from and maintained centrally of
the outer one by means of the rollers *b*, with
5 their flanges *b'*, the arm *e*, rigidly secured to
the vessel C, connecting - rod I, and the ro-
tative crank E, all arranged and combined

substantially as and for the purpose speci-
fied.

JOS. WILKINS.

Witnesses:

CHAS. W. ARNOLD,
DANL. FISHER.