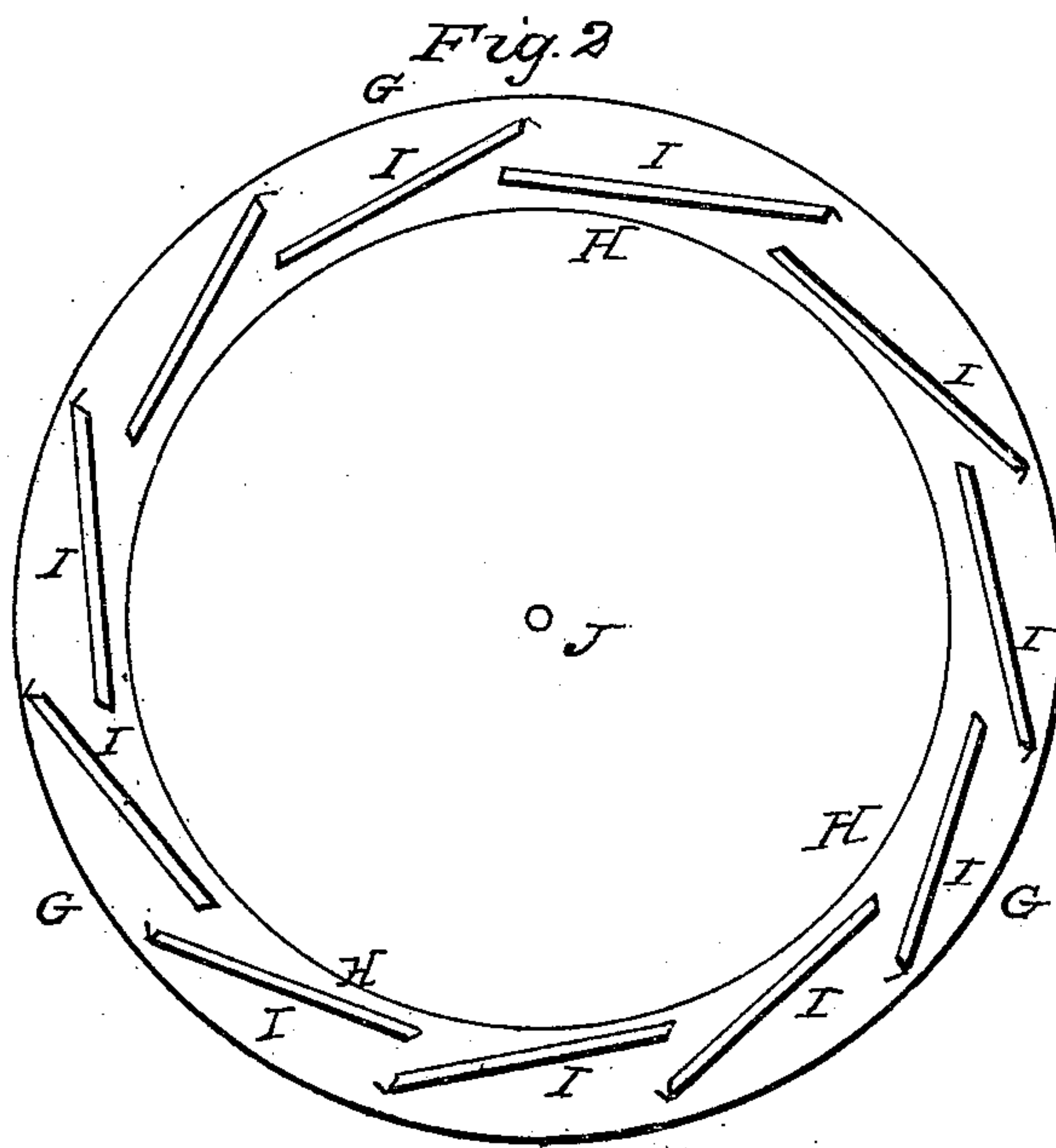
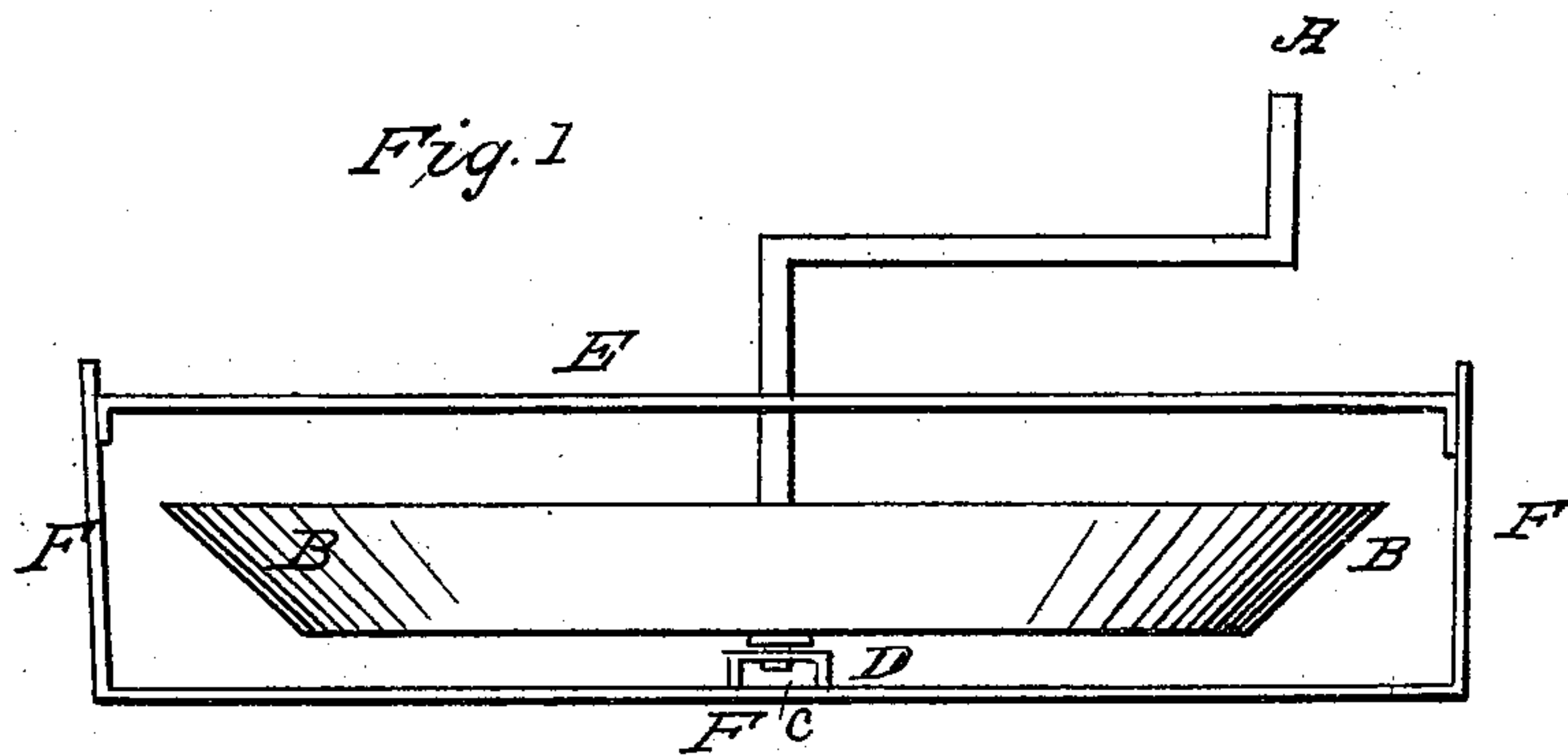


L. P. JENKS.

Ore Washer.

No. 6,763.

Patented Oct. 2, 1849.



UNITED STATES PATENT OFFICE.

LEMUEL P. JENKS, OF BOSTON, MASSACHUSETTS.

ARRANGEMENT OF THE CONDUCTORS IN CENTRIFUGAL GOLD-WASHERS.

Specification of Letters Patent No. 6,763, dated October 2, 1849.

To all whom it may concern:

Be it known that I, LEMUEL P. JENKS, of Boston, county of Suffolk, State of Massachusetts, have invented a new and useful
5 Improvement in Machinery for Separating Ores and other Heavy Substances from Sand, Rock, Gravel, and other Impurities.

The said improvements, the principle thereof, and manner in which I have contemplated the application of the same and the peculiarities by which it may be distinguished from other inventions of a like character, or for a similar purpose, together with such parts or combinations as I claim
10 to be of my invention I have herein set forth in the following description and accompanying drawings, herein referred to, which taken in connection form my specification.

I use a hollow containing vessel of metal, wood or other substance with the side flaring. The form I prefer is that having a flat bottom, but sometimes I have the bottom concave, or with grooves made therein, and I prefer to arrange the sides so as that, a section of the vessel would, the bottom being supposed flat, present the figure of a trapezoid. A plan of the contrivance shows it to be of a round shape. Arranged sometimes on the bottom, but preferably on the sides
25 of the vessel, are conductors generally made in the form of a split tube, with the concavity downward; each conductor overlapping the one preceding it, and having a slight curvature necessary to correspond with the sides of the vessel. This curvature is greater or less as the number of the conductors is greater or less, and it may be perhaps a more clear expression to say that the course of the conductors is on a line co-incident with the periphery of a series of ellipses, formed by cutting the case or its frustrum which constitutes the bowl. And these conductors are arranged in one row or two or more rows. And the outer ends of
45 each and all of the conductors in one row are generally equidistant from the center, and the same is the case generally with the inner ends of all those on the same row, and the conductors are generally fixed, but sometimes I have them removable or movable in different ways, either sliding or arrangeable at a different angle. And passing through the center of the vessel, there is fixed a shaft with a crank or a wheel, which shaft is fixed
50 in different ways, as may be convenient, and by this shaft a rotary motion is communi-

cated to the vessel. The vessel being submerged in water, in another containing vessel, or otherwise, and the pivot which is fastened to the bottom of the first named
60 vessel (made by the protruding end of the shaft or otherwise) having a cavity in which to turn, and the shaft being secured by any convenient method so as to hold it upright and yet permit its turning, a rotary
65 motion is communicated, the substances to be operated on having been thrown promiscuously in. The centrifugal force carries the lighter particles over the side. The heavy substances to be retained falling to the
70 bottom, are afterward as the rotary motion continues, thrown to the periphery, the passage of the water having taken from them the larger proportion of the lighter particles. The heavy substances being caught
75 by the conductor upon which they strike pass along it till they reach that end of it which is nearest the center of the pan. Here an action takes place which is peculiar to my machine. The revolution continuing,
80 in the passage of the remaining particles from one conductor to another, the outflowing current of water, created by the action of centrifugal force, performs the operation of sifting out the remainder of the lighter
85 particles which are discharged over the side. The heavier particles however, being retained by gravitation and centrifugal force, beneath the conductors continue revolving. The rotary motion being discontinued, the
90 ores and other heavy substances to be retained, fall to the bottom and are then collected. To describe the operation with exactitude, it should be said that the conductors in rotating, pass from before the
95 objects or particles of greater specific gravity, which remain suspended. The only rotary motion communicated to these last being due to the effect of friction.

Sometimes I inclose the vessel above mentioned in another vessel of metal or other substance and form one complete machine of the whole. And sometimes the vessel or pan revolves in a wooden or metallic frame, placed in a river. And sometimes I combine several pans together, side by side, and sometimes I use the contrivance without water. And the proportions which I at present prefer are, the pan 22 inches diameter at bottom, the sides 3 inches high. The
100 ends of the conductors nearest the bottom, to be $1\frac{1}{2}$ inches from the bottom. The sides

to incline at an angle of 30 degrees from the perpendicular. The vessel containing the water, if a vessel is used, should have its sides at least one inch from the outer edge
5 of the pan,—a greater distance is advantageous. The pivot shaft and crank may be of such dimensions as may be convenient, and the name I give to the machine is the trapezoidal washer.
10 And in the drawings annexed Figure 1 is a section. A is the crank, B, B, the pan; C, the pivot on which the crank turns; D, the bearing in which the pivot turns; E, the cross bar supporting the crank; F F F, the
15 box or vessel containing the water in which the pan, etc., are submerged. Fig. 2 is a plan in which G G G represent the outer

edge of the pan; H H H, the side at its junction with the bottom; I I I I, etc., the conductors and J the section of the crank 20 and pivot.

And what I claim as of my own invention in the above contrivance is—

The arrangement of conductors (on the inner surface of a revolving metallic or 25 other containing vessel) overlapping each other, thus permitting the particles to be subjected to the action of the water in their passage from one conductor to another.

LEML. P. JENKS.

Witnesses:

EZRA LINCOLN, Jr.,
CALVIN BROWN.