

No. 613,172.

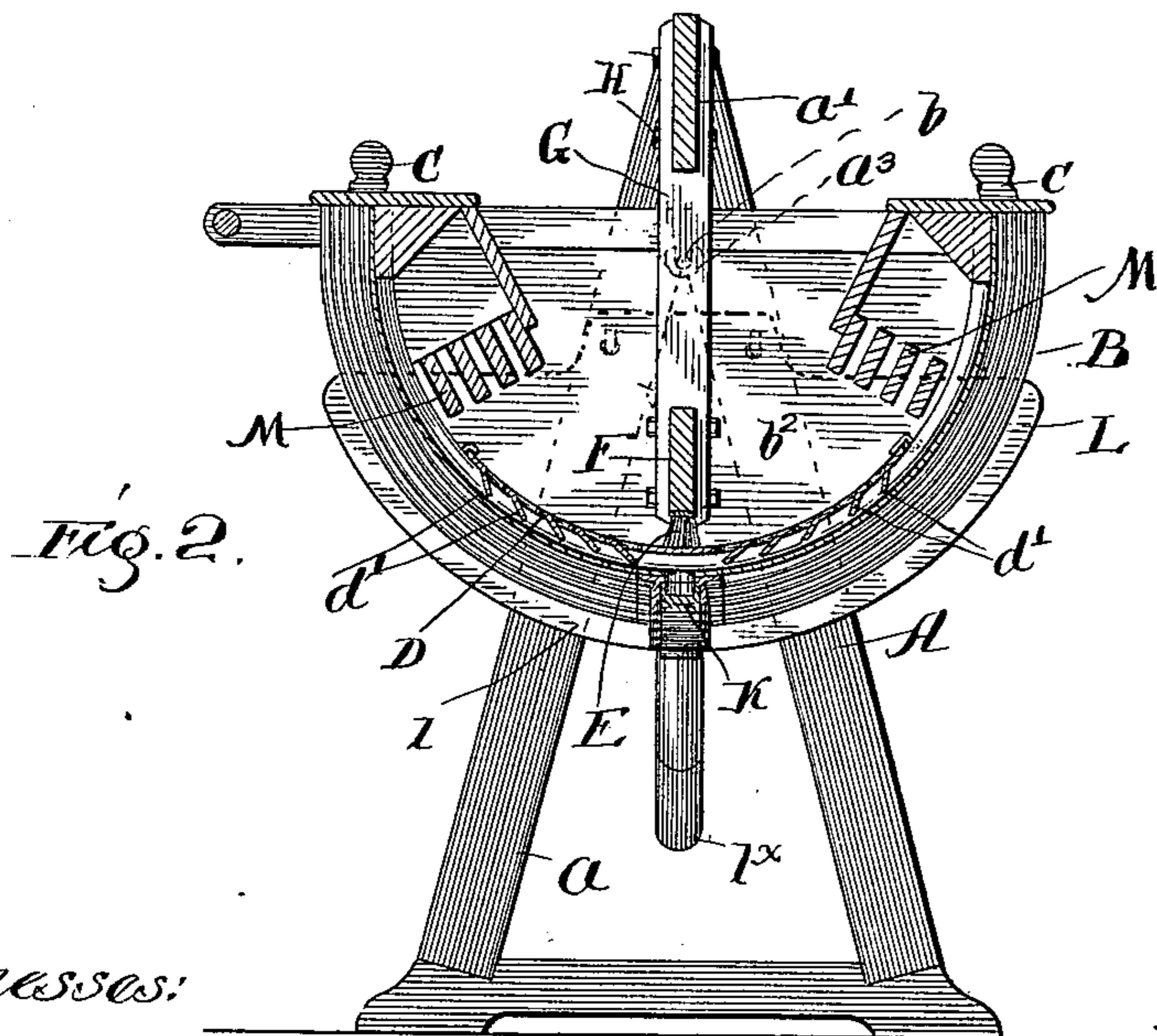
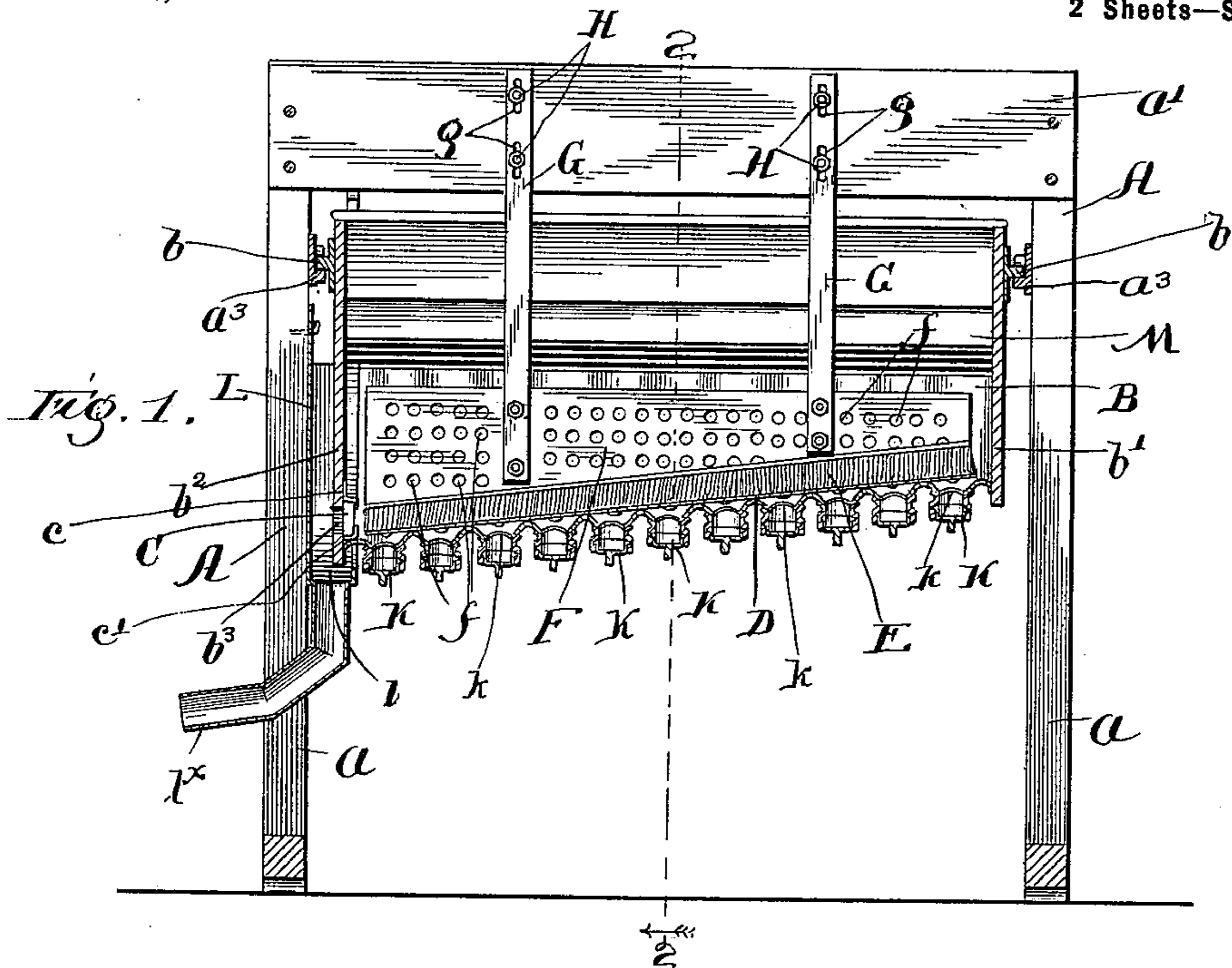
Patented Oct. 25, 1898.

G. W. NEWBERRY.
GOLD WASHER.

(Application filed Sept. 7, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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A. H. Nelson

Inventor:

George W. Newberry
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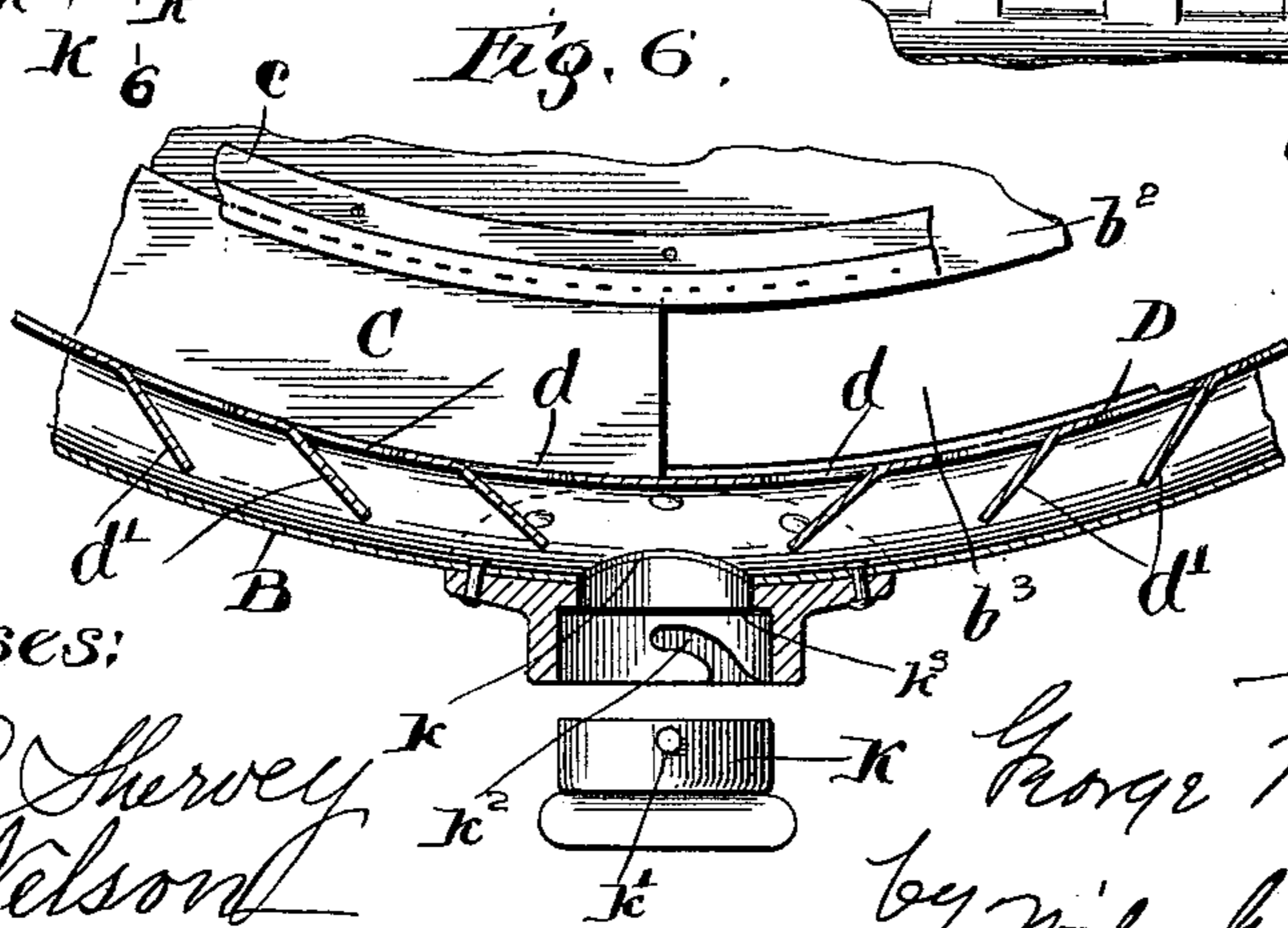
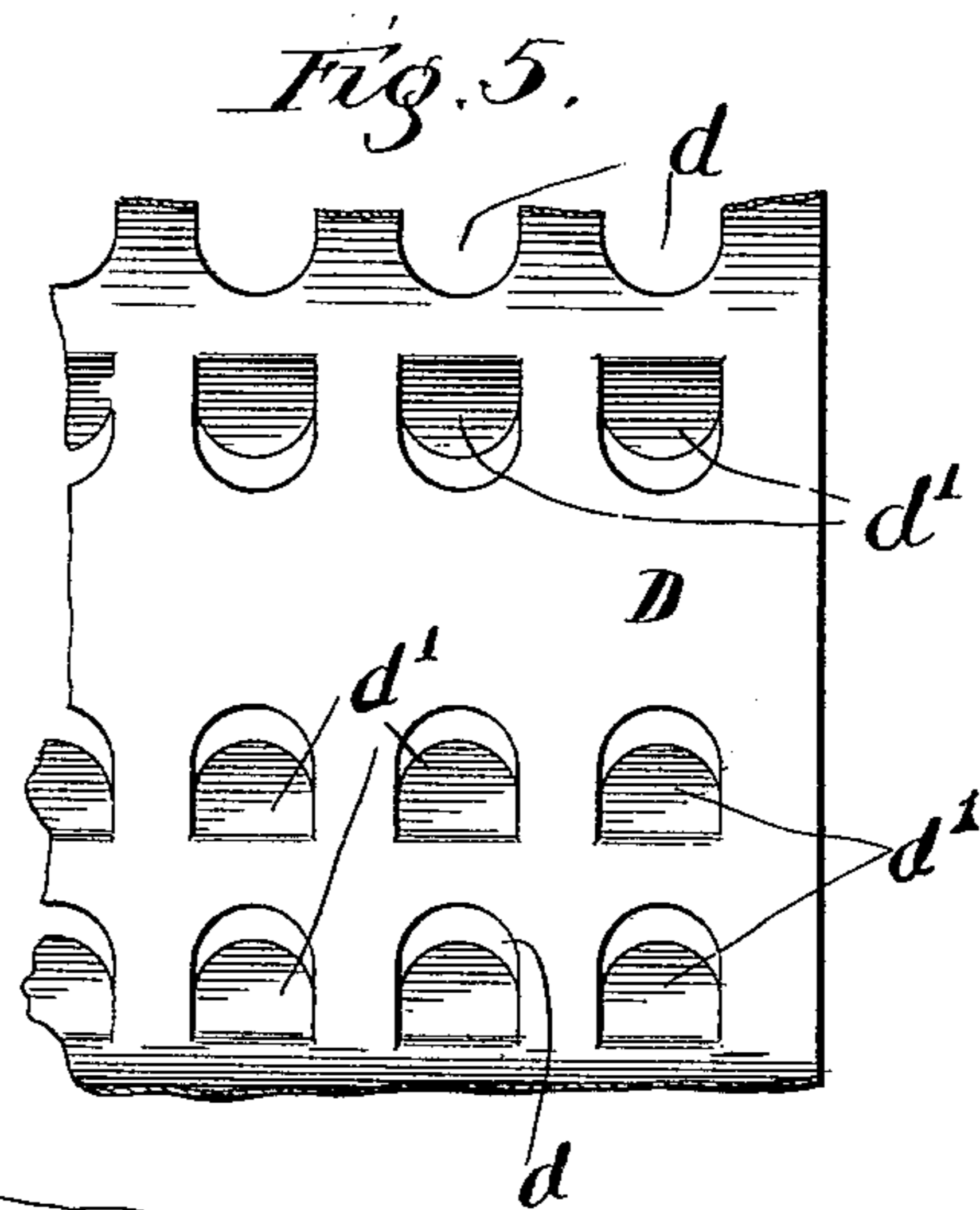
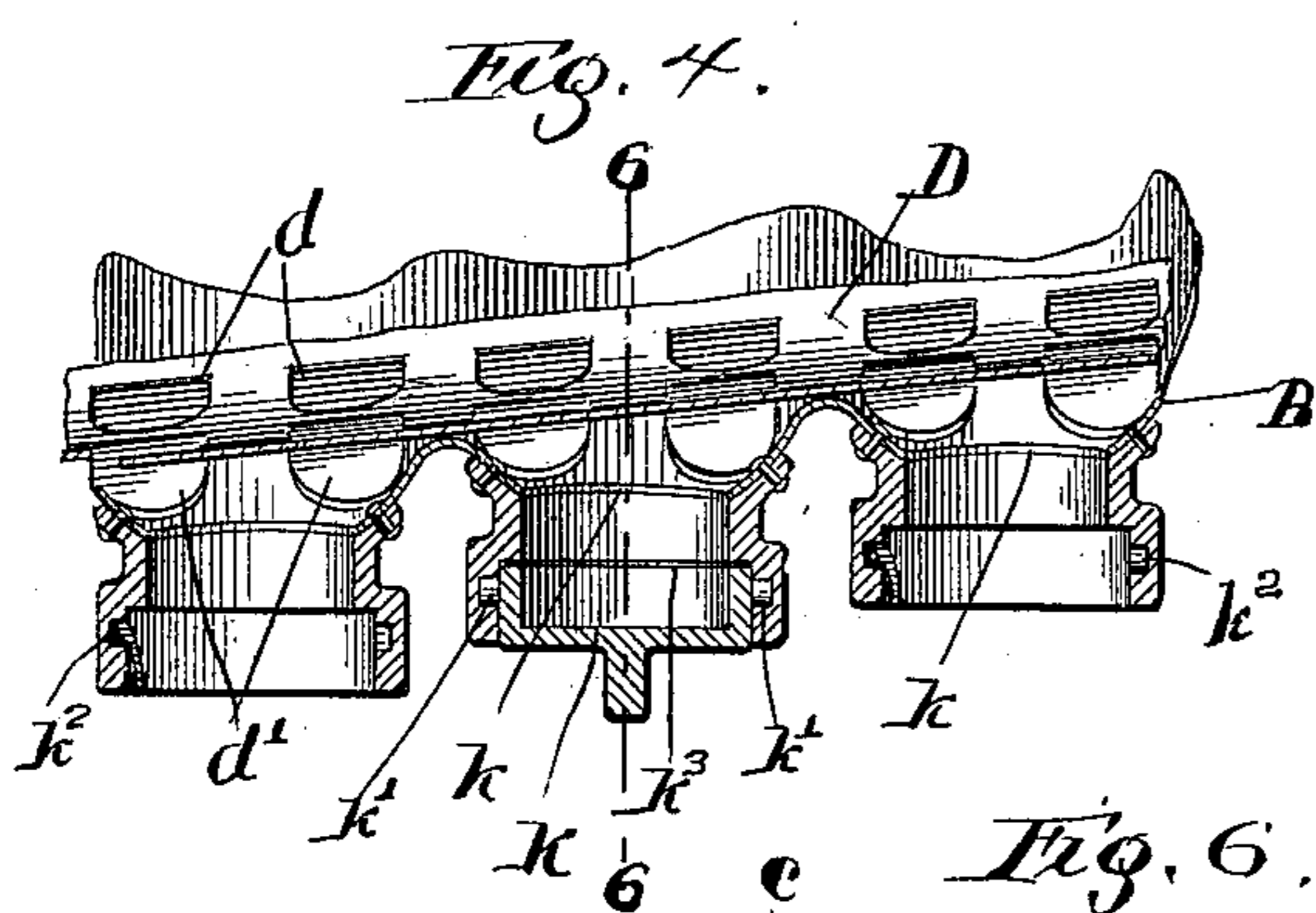
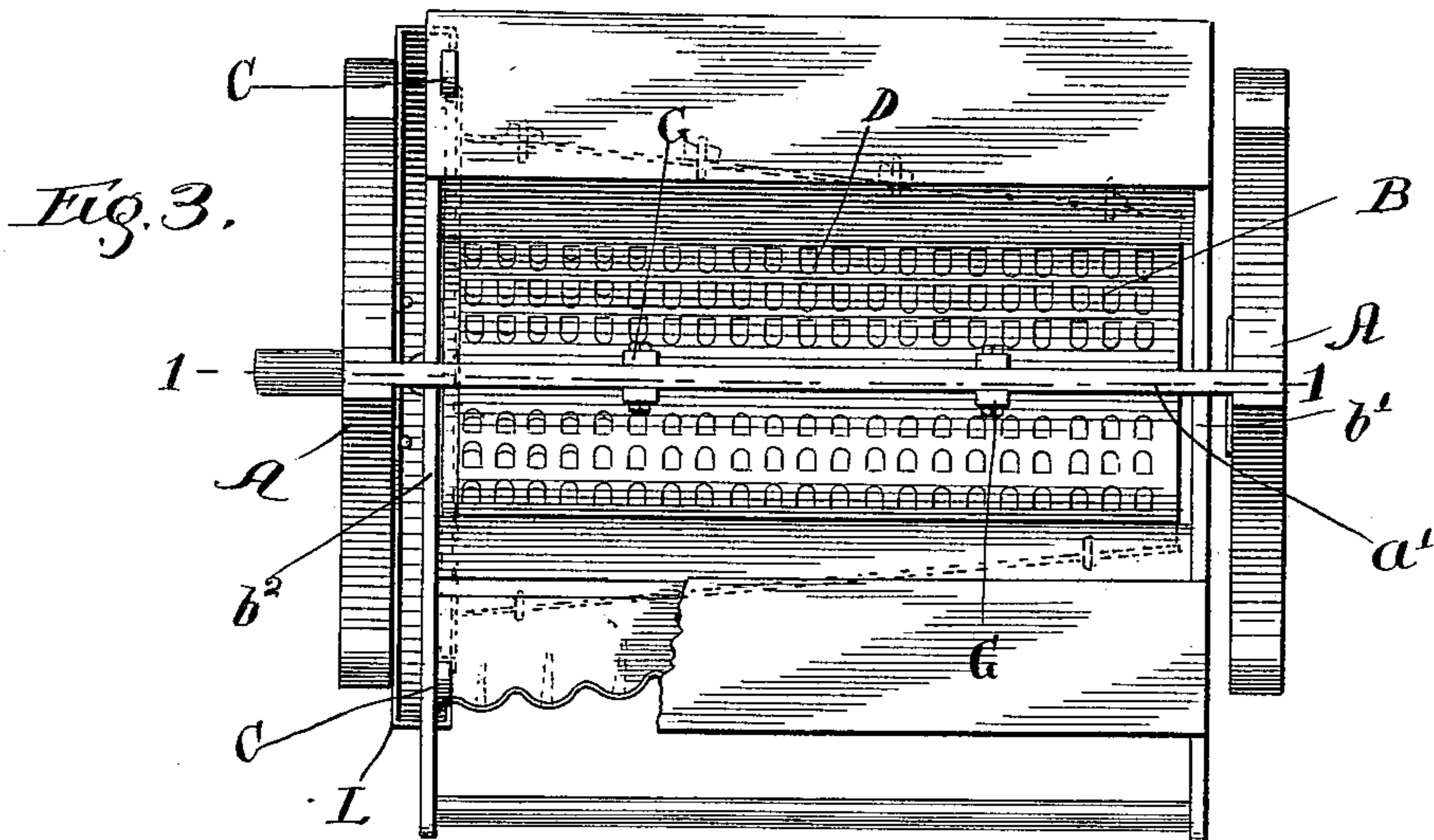
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2 Sheets—Sheet 2.



Witnesses:

Chas O. Shervey
A. A. Nelson

Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE W. NEWBERRY, OF GLENELLYN, ILLINOIS, ASSIGNOR OF ONE-HALF TO M. CAHILL, OF CHICAGO, ILLINOIS.

GOLD-WASHER.

SPECIFICATION forming part of Letters Patent No. 613,172, dated October 25, 1898.

Application filed September 7, 1897. Serial No. 650,727. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. NEWBERRY, a citizen of the United States of America, residing at Glenellyn, in the county of Du Page and State of Illinois, have invented certain new and useful Improvements in Gold-Washers, of which the following is a specification.

My invention relates to certain improvements in gold washers or machines for washing and separating placer-dirt to free the gold contained therein from the dirt and impurities with which it is found.

The object of the invention is to produce a rapid and easy-working washer by means of which the placer-dirt may be thoroughly agitated in water and the heavier particles of gold collected, while the lighter portions of the dirt are washed away.

To such end the invention consists in certain mechanical features of novelty, which will be fully described below and clearly defined in the appended claims.

The invention is illustrated in its preferred form by means of six figures, of which—

Figure 1 is a central vertical longitudinal section, the line of section being shown at 1 1 in Fig. 3. Fig. 2 is a vertical cross-section in line 2 2 of Fig. 1. Fig. 3 is a plan view of the device. Fig. 4 is a detail sectional view of one of the cups and certain parts adjacent thereto. Fig. 5 is a detail plan view of a portion of the screen or riddle; and Fig. 6 is a detail section in line 6 6 of Fig. 4, the cup being removed.

Referring to the drawings, A represents a frame, which may be of any desired form and which is here shown as made up of triangular end supports a , carrying at the top a wide cross-bar a' . On the inside of the end supports are a pair of sockets a^3 , in which is swung an oscillating tub B by means of gudgeons b , resting in the sockets. This tub is preferably semicircular in cross-section and has a corrugated bottom, the corrugations preferably running transversely, as shown in the drawings, the object of the corrugations being to retard the movement of the dirt toward the discharge end and the object of the transverse arrangement of the corrugations being to allow said dirt as free a lateral movement as possible. Of the two ends of the tub

b' b^2 I prefer to make the former narrower than the latter, so as to give the bottom a gentle incline, which is necessary to move the dirt in the proper way to discharge it finally from the tub. At the discharge end b^2 is an opening b^3 , preferably near the bottom, through which the contents of the tub may be drawn off, and a slide C, running between guides c c' upon the inside of the end b^2 , is provided to close the opening b^3 when the dirt is first put in and until it is sufficiently mixed with the water.

A screen or riddle D, conforming in shape to the bottom of the tub, rests, preferably, upon the high portions of said corrugations and contains a series of holes d , from the edges of which tongues d project downwardly and toward the middle of the bottom of the tub. In practice this screen is preferably made by stamping down the metal from the holes to form the tongues.

Just above the screen and preferably in contact therewith is a brush E, of any suitable material, steel being preferred, supported by a resistance-board F, containing a series of holes f , itself carried by cleats G, adjustably secured to the cross-bar a' by means of slots g and nuts and bolts H. The adjustment is desirable to take up any wear of the brush, so that the same may be kept in position to thoroughly clean the middle portion of the riddle. Along the middle of the bottom of the tub and preferably at the lowest point of each corrugation is an opening k , in which is secured a cup K by means of a pair of lugs k' upon the outside of the cup and a pair of cam-grooves k^2 in the sides of the hole. A washer k^3 is preferably interposed to make the connection water-tight. At the lower or discharge end of the bottom of the tub is a catch-pan L, preferably having an arc-shaped bottom l , concentric with the gudgeon upon which the tub swings. From the lowest portion of this catch-pan a pipe l^x is provided to carry the discharge from the tub into a convenient sluiceway for further treatment, as is common in the handling of placer-dirt.

Upon one side of the tub a short way up from the bottom I have shown a series of pressure-bars M to assist in breaking up any clods or frozen particles that may be found,

said bars coacting with the resistance-boards F and acting as a crusher as the tub is oscillated.

In operation the dirt is thrown into the tub, together with a sufficient quantity of water. The tub is then oscillated rapidly, thoroughly mixing the dirt and water because of the stationary resistance-board in the middle of said tub. During this process the heavier particles—such as sand, gravel, gold, &c.—sink to the bottom and pass through the riddle into the corrugations and cups at the bottom of the tub. After a sufficient operation in this way to insure the deposit of all the gold the opening in the discharge end of the tub is thrown open and the dirty water, mud, and clay allowed to flow out. A stream of water is then turned into the tub and flows through the same out of the discharge-opening, while the tub is oscillated, rapidly shaking the heavier particles about the corrugations of the bottom and picking portions thereof up by the downwardly-inclined tongues in the riddle, so that a further separation is accomplished, removing the sand and gravel and finally collecting the gold in a substantially clean condition in the cups K.

I recognize the possibility of great variation in form and construction without departing from my invention, and I therefore desire not to limit myself to the specific details here shown and described; but

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

1. A gold-washer having a frame carrying an oscillating tub containing a series of pressure-bars and a stationary resistance-board within the tub adapted to coact with said bars and crush any coarse material which may be thrown in the tub; substantially as described.

2. In an oscillating gold-washer, a riddle containing a series of openings and tongues inclined obliquely downward from the edges of said openings, whereby as said tongues strike the contents of the washer in the oscillation thereof they tend to raise the same from the bottom; substantially as described.

3. In an apparatus of the class described, the combination with a tub concave in cross-section and adapted to oscillate upon a longitudinal axis, of a riddle or screen arranged in said tub near the bottom thereof and approximately parallel with said bottom, said screen being provided with a series of openings and a series of downwardly-projecting tongues adjacent to said openings and extending obliquely toward the lowest portion of the tub whereby the oscillation of the tub

as it shakes the contents away from said lowest portion throws the same against these oblique tongues and tends to raise said contents from the bottom; substantially as described.

4. In an oscillating gold-washer and in combination with a tub upwardly concave in cross-section and hung upon a longitudinal axis, a screen or riddle arranged substantially parallel with the bottom of said tub and having a series of openings formed by stamping portions of the metal of said screen downward upon the side adjacent to the lowest portion of the tub to form tongues projecting downward and toward said lower portion to raise the contents of the tub from the bottom as said tub oscillates; substantially as described.

5. An ore-washer having an oscillating tub arc-shaped in cross-section and hung upon a longitudinal axis substantially coincident with the arc's center, a laterally-corrugated bottom in said tub provided with pockets arranged, respectively, in the lowest portions of the corrugations, and a perforated riddle or screen adjacent to the bottom of the tub and substantially parallel therewith, a series of tongues adjacent to the perforations of the screen and extending therefrom toward the bottom and obliquely toward the pockets, whereby as the contents of the tub are carried away from the pockets by the oscillation of the tub said contents are raised above the screen by the tongues and subjected to a more thorough washing; substantially as described.

6. The combination with a semicircular tub hung upon its axis of curvature and provided with a longitudinally-inclined bottom containing a series of lateral corrugations and a series of pockets in the lowest portions of said corrugations, said pockets being formed by removable cups, of a screen arranged a short distance above the bottom of the tub and substantially parallel therewith, said screen containing a series of perforations and adjacent downwardly-extending tongues inclined toward the pockets, a stationary resistance-board arranged above said pockets when the tub is in its normal position and a brush extending downward from said resistance-board to said screen; substantially as described.

In witness whereof I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, this 2d day of September, A. D. 1897.

GEORGE W. NEWBERRY.

Witnesses:

CHAS. O. SHERVEY,
A. I. H. NELSON.