

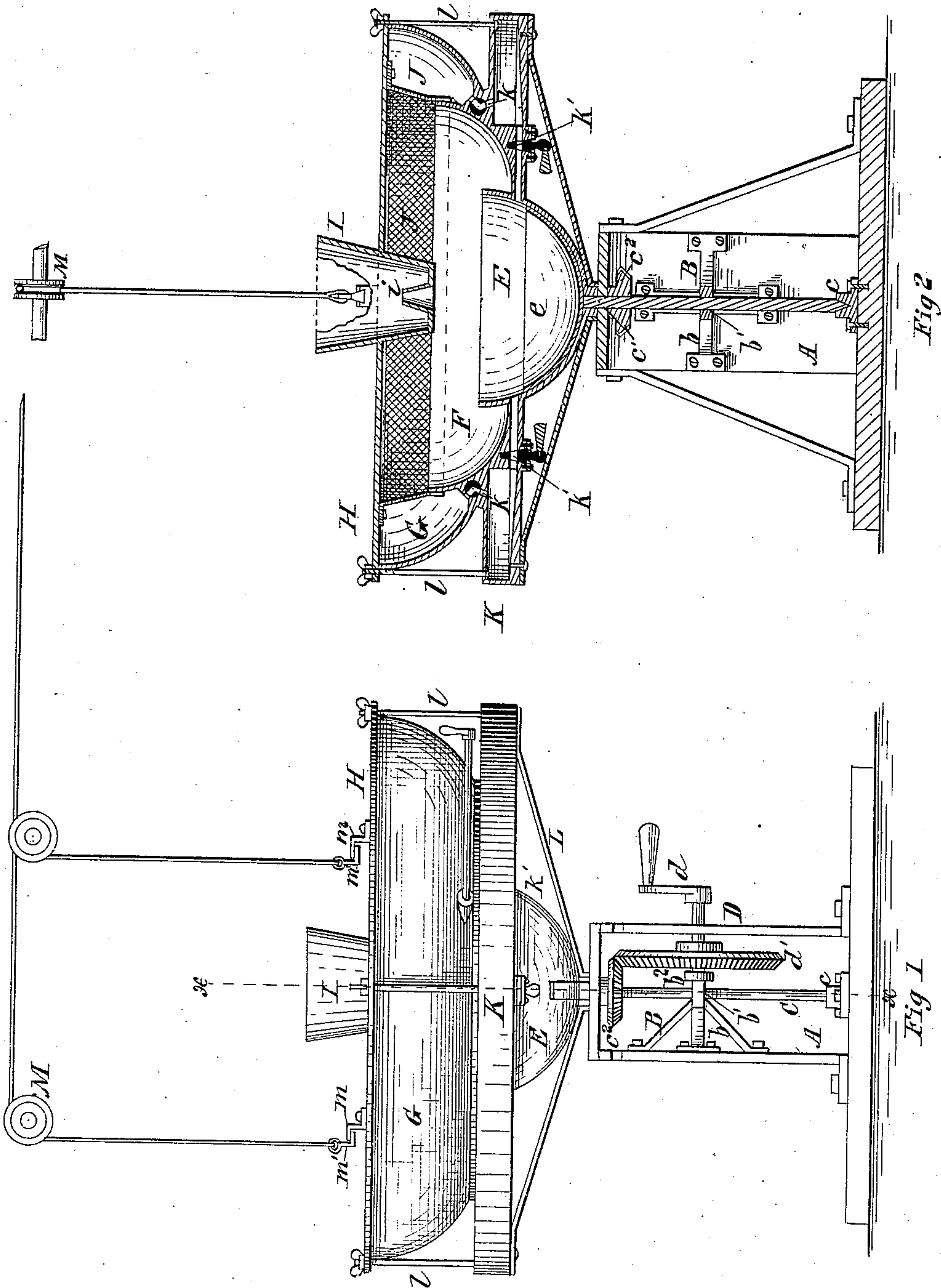
(No Model.)

G. GLASS.

CENTRIFUGAL MACHINE FOR SEPARATING ORES.

No. 255,967.

Patented Apr. 4, 1882.



Witnesses

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# UNITED STATES PATENT OFFICE.

GILBERT GLASS, OF WHITE OAKS, TERRITORY OF NEW MEXICO.

## CENTRIFUGAL MACHINE FOR SEPARATING ORES.

SPECIFICATION forming part of Letters Patent No. 255,967, dated April 4, 1882.

Application filed July 30, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT GLASS, a citizen of the United States, residing at White Oaks, in the county of Lincoln and Territory of New Mexico, have invented certain new and useful Improvements in Centrifugal Machines for Separating Ores, which are set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of a machine embodying my improvements; and Fig. 2, a vertical section of the same, taken on the line *x x*, Fig. 1.

My invention relates to a centrifugal machine adapted to the washing of gold ore.

My invention consists of an apparatus which is adapted to separate gold ore from earthy impurities and to purify and preserve for repeated use the water employed in effecting such separation.

In the drawings, A represents the supporting-frame of the machine; B, a bracket provided with braces *b*, and bored vertically at *b'* to admit of the insertion of shaft C, and provided at *b''* with a suitable bearing for the inner end of main shaft D, the outer end of which has bearings in frame A, and is provided with crank *d*, or a pulley instead thereof when the apparatus is to be revolved by other than hand-power.

The vertical shaft C is stepped in socket *c* and steadied by bearings *c'* and *b'*. The main shaft D carries a beveled pinion, *d'*, which meshes into the beveled pinion *c''* on shaft C. On shaft C, above frame A, is fastened the bowl E. Before this connection is made the bowl E is partially sunk in and attached to the bottomless bowl F, which has been previously partially sunk in and attached to the bottomless bowl G. Thus an annular trough between the bowls E and F is formed, in which worthless sand is collected by reason of its low specific gravity as compared with ore and precious metals, which remain in bowl E, all as herein-after more particularly set forth. A similar trough between the bowls F and G is thus formed for collecting water, while the light sand remains in bowl F and the ore and precious metals in bowl E, which operation is also detailed more at length hereinafter.

Bowl E is provided with a removable false bottom, *e*, which retains the heavy residuum

after the completion of the process of washing. This bowl E is amalgamated with quicksilver in order to save all fine gold and silver. The bowl G is surmounted by the cover H, having a hole in its center, in which is secured the funnel I, provided with the central cone, *i*, to so direct the sand that it shall strike the water at a little distance from its axial center.

J is a filter, of wire-cloth lined with linen or of other suitable material substantially impervious to the suspended impurities of the wash. It is fastened to cover H, and its lower edge is adapted to pass over and closely fit the upper rim of bowl F.

Around the series of bowls, below bowl G and above the false bottom *e*, is secured a water-reservoir, K, provided with one or more supply-pipes, *k*, having suitable valves and connecting it with bowl G, and also provided with one or more discharge-pipes, *k'*, having suitable valves and connecting with bowl E.

L are braces; *l*, bolts, which secure the removable cover H by winged nuts. M are sheaves, over which pass ropes for raising and lowering cover H. These ropes are attached to the cover by hooks *m m'*, of such construction that they will be self-detaching, the revolution of the series of bowls causing the hooks *m* to ride out over the hooks *m'*.

The operation of the apparatus is as follows: Bowl E is nearly filled with water, and the cover H, if not already put on, is secured in place. After this preparation the ore-containing earth is poured in through funnel I and the bowls are made to revolve, care being taken not to revolve the bowls so fast as to throw out any material portion of the contents before the charge of sands has all struck the water, the speed after this, however, being increased until everything but ore and precious metals has been thrown out of bowl E, and until all the filterable water has passed filter J, but not so fast as to throw out any of the precious metals. The ore is thus deposited in bowl E, the rest of the sand in bowl F, and the purified water in bowl G. The machine is now stopped to let the water into reservoir K, after which the supply-valves are closed. The cover H is then removed, false bottom *e* is taken out and emptied of the ore, and finally the bowls are rotated fast enough to throw out the remaining sand. The false bottom *e* is



then replaced, the water in reservoir K is let into bowl E, the discharge-valves are closed after its passage, and cover H is secured in place. The apparatus is now ready to receive  
5 a new charge, utilizing the same water as before.

It is evident that the bowls E and F, with filter J, are all the elements essential to a separation each from the others of ore, sand,  
10 and water, the cover H, however, enabling me to use a comparatively narrow filter, and less care in regulating the speed of the apparatus, and the bowl G, especially when used in connection with reservoir K, being a very useful  
15 and efficient means of preserving the filtered water for repeated use.

The funnel I is of the nature of a gage, and is of course very useful as dispensing with the personal attention of the operator to the  
20 insertion of each charge.

The above-described filtering apparatuses are equally useful in the ordinary filtering of liquid from suspended impurities, and when it is intended to use my invention for this purpose of course a single receptacle may be substituted for bowls E and F.  
25

Obviously many details of construction and of procedure may be varied without departing from the principles of my invention. I do not  
30 therefore wish to be understood as limiting myself in all particulars to the embodiments of my invention hereinabove particularly described.

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

1. In a centrifugal machine, receptacle F, provided with filter J, and concave receptacle E, combined and operating substantially as set forth.

2. In a centrifugal machine, receptacle F, provided with filter J and cover H, and concave receptacle E, combined and operating substantially as set forth.

3. In a centrifugal machine, receptacle F, provided with filter J, and amalgamated receptacle E, combined and operating substantially as set forth.

4. In a centrifugal machine, receptacle F, provided with filter J and cover H, and amalgamated receptacle E, combined and operating substantially as set forth.

5. A centrifugal machine consisting of receptacles E, F, and G, filter J, cover H, and suitable revolving mechanism, all combined and operating substantially as and for the purpose set forth.

6. A centrifugal machine consisting of receptacles E, F, and G, filter J, cover H, reservoir K, and suitable revolving mechanism, substantially as described.

7. In a centrifugal machine, a revolving cover, H, having hooks *m*, and ropes having hooks *m'*, combined and operating substantially as set forth.

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Attest:

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