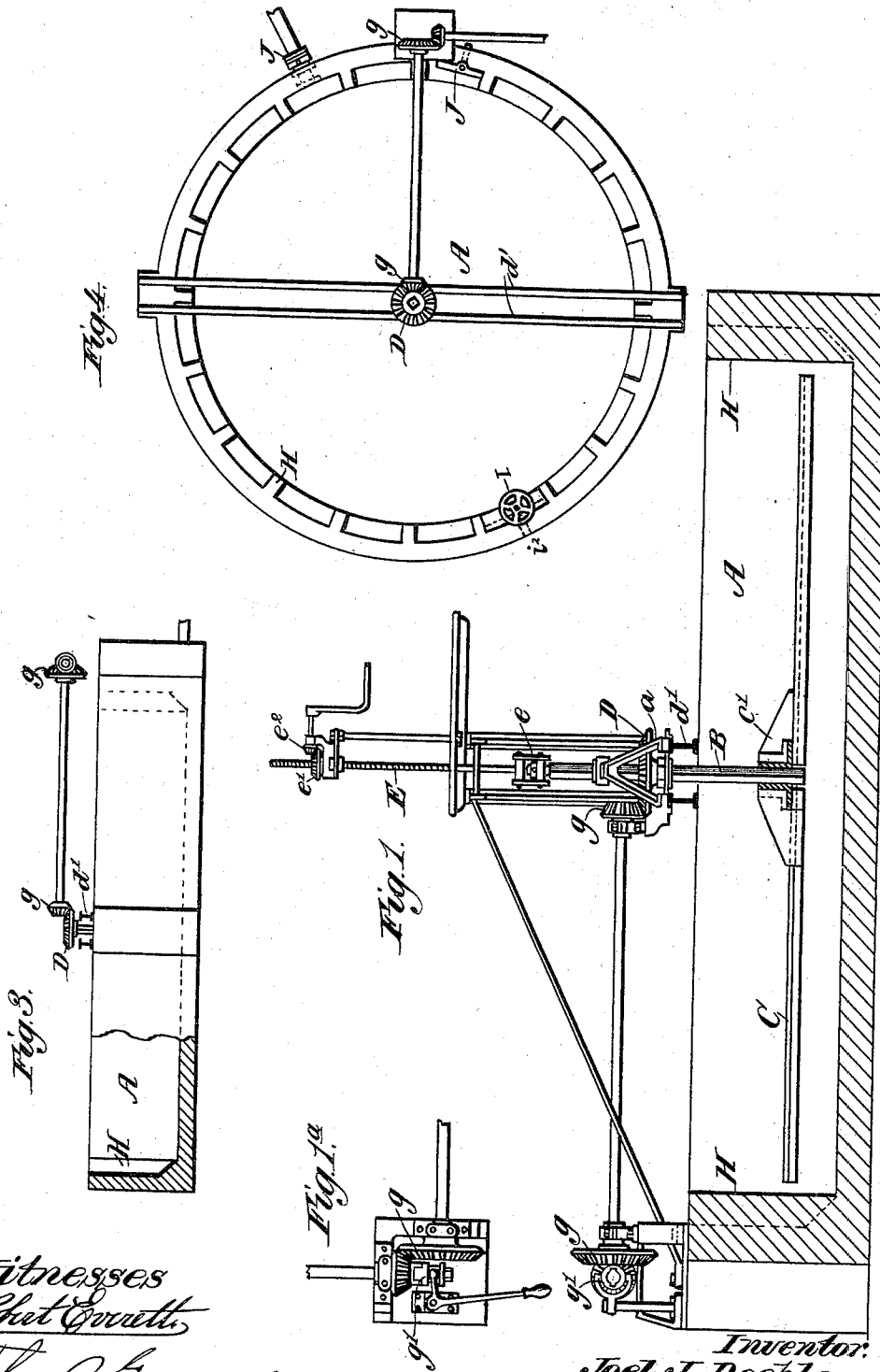


(No Model.)

2 Sheets—Sheet 1.

J. J. DEEBLE.
APPARATUS FOR EXTRACTING GOLD FROM AURIFEROUS MATERIAL.
No. 584,627.

Patented June 15, 1897.



Witnesses
Phet Everett
Thos. A. Green

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(No Model.)

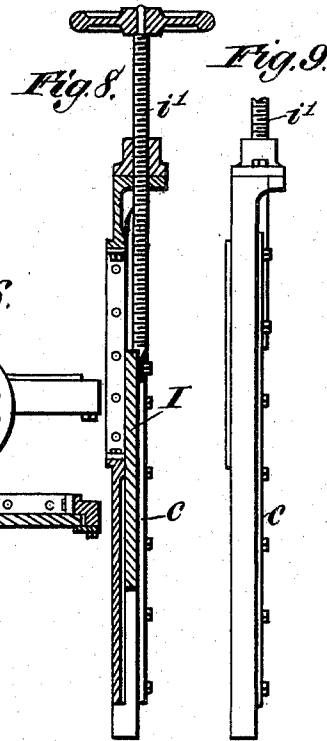
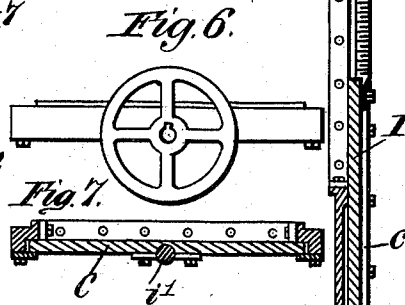
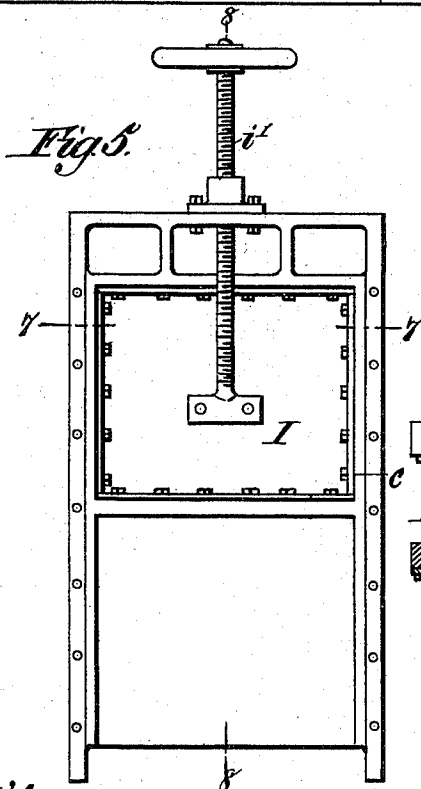
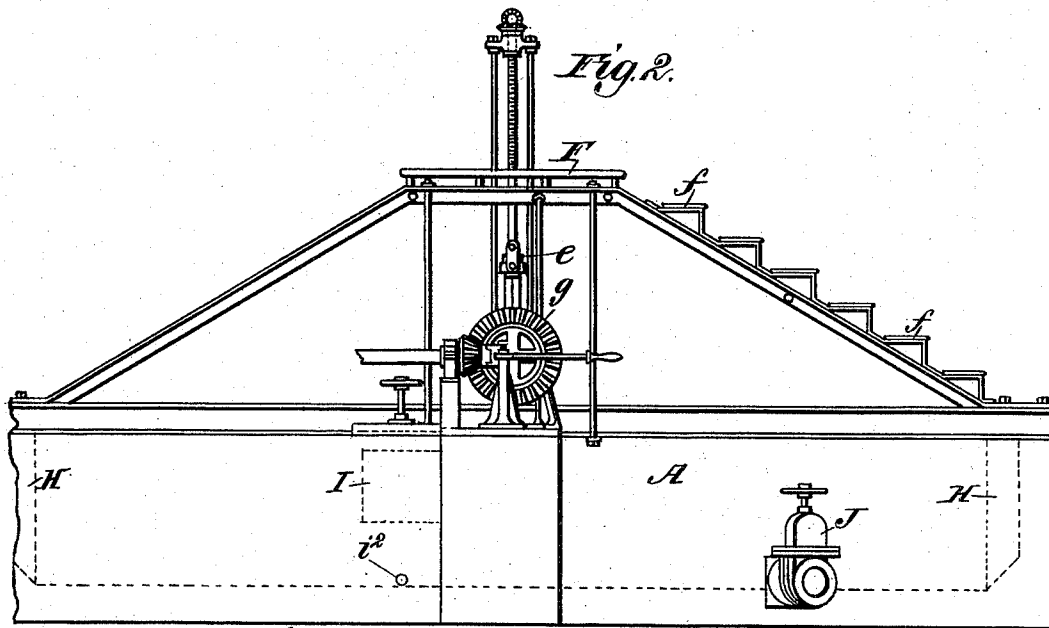
2 Sheets—Sheet 2.

J. J. DEEBLE.

APPARATUS FOR EXTRACTING GOLD FROM AURIFEROUS MATERIAL.

No. 584,627.

Patented June 15, 1897.



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UNITED STATES PATENT OFFICE.

JOEL JAMES DEEBLE, OF BENDIGO, VICTORIA.

APPARATUS FOR EXTRACTING GOLD FROM AURIFEROUS MATERIAL.

SPECIFICATION forming part of Letters Patent No. 584,627, dated June 15, 1897.

Application filed September 14, 1896. Serial No. 605,827. (No model.)

To all whom it may concern:

Be it known that I, JOEL JAMES DEEBLE, metallurgist, a subject of the Queen of Great Britain, residing at Rae Street, Bendigo, in the British Colony of Victoria, have invented an Improved Machine for Use in the Extraction of Gold from Auriferous Material by the Aid of Chemical Solvents, of which the following is a specification.

This invention has been devised in order to provide a machine for use in the extraction of gold from auriferous material by the aid of chemical solvents in order to insure the particles of auriferous material being brought into intimate contact with the cyanid or other solvent solution. It includes a vat or pan to receive the auriferous material to be treated, having at or about its center a vertical shaft or spindle with one or more agitators or stirrers attached to its lower end. Motion is imparted to this shaft or spindle by bevel-gearing or other convenient mechanical contrivances, and means are provided for reversing the rotation and controlling the speed of the agitators, as well as for raising or lowering the agitator shaft or spindle. These means may consist of a screw-threaded lifting-rod fitted with a correspondingly threaded bevel-wheel in gear with a bevel-pinion fitted with a crank-handle, whereby it may be rotated in the required direction, or, if preferred, a rack and pinion may be used for the purpose. The inner side of the wall of this vat or pan is provided with a series of projections which produce eddies or swirls in the material under treatment as it is carried round the vat or pan. In order to drain or draw off the gold-bearing solvent from said vat, it is provided with a vertically-sliding valve. A waste-discharge valve may also be provided in the lower part of the vat or pan for the purpose of enabling the waste material to be sluiced therefrom after the gold has been dissolved and the gold-bearing solution has been drawn off through the valve above referred to.

The accompanying drawings will more clearly illustrate the construction and arrangement of my improved machine.

Figure 1 represents a vertical central section of said machine; Fig. 1^a, a plan of part of the driving-gear; Fig. 2, a side elevation of

said machine; Fig. 3, a sectional elevation, and Fig. 4 a plan, of a vat drawn to a smaller scale. Fig. 5 is a side elevation of the vertically-sliding valve above referred to. Fig. 6 is a plan thereof. Fig. 7 is a horizontal section on line 7 7, Fig. 5. Fig. 8 is a vertical central section on line 8 8, Fig. 5; and Fig. 9 is a side elevation of said valve.

The same letters of reference indicate the same or corresponding parts in all the figures.

A represents a vat to contain the auriferous material to be treated, while B represents the vertical spindle which is provided in or about the center of said vat and which carries the agitators or stirrers C on its lower end. These latter consist, by preference, of projecting bars or arms, as shown, and they may be attached at their inner ends to a casting *c'* on the lower end of the spindle B, which is preferably made square or otherwise sided in cross-section and is passed through a corresponding hole in a bevel-wheel D, which is supported in a casting *d*, resting upon bearers or beams *d'*, extending across from side to side of the vat A. This construction admits of rotary motion being imparted to said spindle B and yet allows of its being raised or lowered, as required. For this latter purpose a screw-threaded rod E is connected to the end of said spindle by a shackle *e* and is fitted with a corresponding threaded pinion *e'* in gear with a second pinion *e''*, having a crank-handle *e'''*. Steps *f* are provided leading up to a platform F in a convenient position over the center of the vat to enable the crank-handle *e'''* to be operated. Rotary motion is imparted to the stirrers by the bevel-gearing *g g* and a clutch *g'* (see Fig. 1^a) to connect or disconnect said gearing, as required.

H H represent the projections which are provided upon the inside of the wall of the vat A for the purpose of imparting a series of eddies or swirls to the material in the vat, so as to more thoroughly bring the whole of such material in contact with the solvent solution. These projections may be made integral with said vat or may be attached thereto, as will be readily understood. I represents the vertically-sliding valve, which is used for drawing off the solvent solution

from the vat A. It is arranged to be slid up and down in a frame *i* by means of a screw-threaded rod *i'*, so that it can be opened more or less according to requirements.

- 5 As shown, the frame *i* is arranged between two of the projections H H in such manner that a space is formed between the casing and its valve and the inner side of the vat. The material flows over the top of the gate or
10 valve and thence out through the hole *i*². By adjusting the valve the height which the material must rise in the vat before it can overflow is regulated.

- J, Fig. 2, represents a waste-discharge valve
15 which is fitted in the lower part of the vat and enables the debris therein to be discharged after it has been treated and the gold-bearing solution has been drawn off.

- If preferred, a series of discharge-pipes
20 might be used for this purpose instead of the valve stoppers or plugs being withdrawn from said pipes as required.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, 25 I declare that what I claim is—

In a machine for the extraction of gold from auriferous material by the aid of chemical solvents, the combination of a vat having vertical ribs arranged at suitable distances 30 apart around its inner periphery, a valve-casing arranged between two of the adjacent ribs and having an aperture in its upper portion, a vertically-movable gate arranged in said casing, means for adjusting said gate 35 for controlling the passage of the material through said aperture and an aperture formed in the wall of the vat opposite the lower end of said valve-casing, substantially as described.

JOEL JAMES DEEBLE.

Witnesses:

EDWARD WATERS,

EDWARD WATERS, Jr.