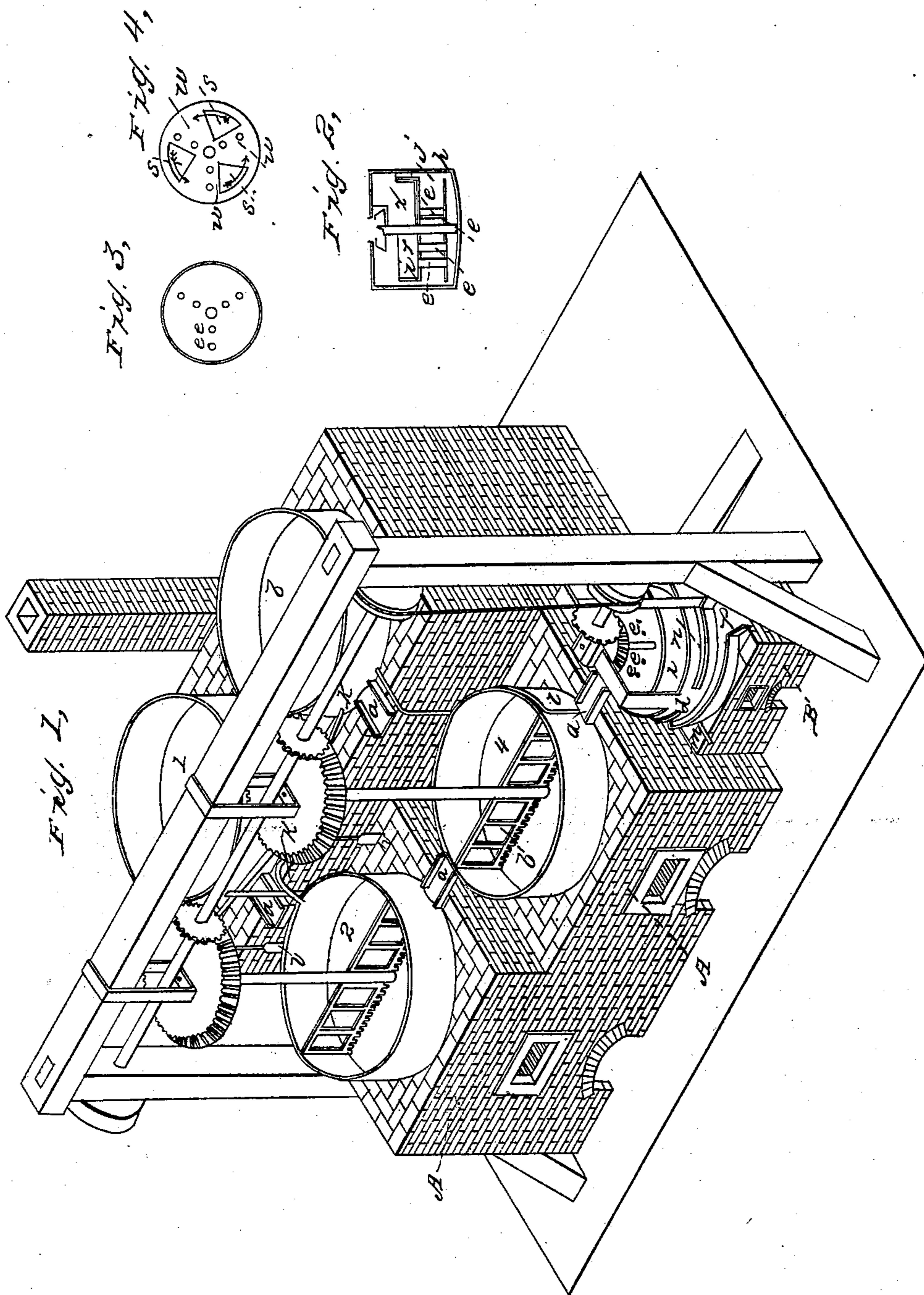


W. GLUYAS.
Ore Amalgamator.

No. 29,545.

Patented Aug. 7, 1860.



Witnesses:
Chas. H. Bond
J. B. Bunker

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM GLUYAS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO HIMSELF AND
WM. H. O'NEILL, OF SAME PLACE.

AMALGAMATOR.

Specification of Letters Patent No. 29,545, dated August 7, 1860.

To all whom it may concern:

Be it known that I, WILLIAM GLUYAS, of the city and county of San Francisco and State of California, have invented a new and useful Machine for the Amalgamation of Gold or Silver Ores or Tailings, which I call "Gluyas's Chemical and Mechanical Gold and Silver Amalgamator;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a sectional drawing of one portion. Figs. 3 and 4 are plans of portions.

Description.—A furnace is constructed with three fireplaces and flues A, A', B, the first two flues (A, A',) being regulated by dampers *v*, *v'*; upon this furnace are set four or more sheet iron pans (four only are represented in the drawing and are numbered 1 to 4). These pans have nozzles *a*, *a'*; pan No. 3 has a pipe *k*, leading to pan No. 2, and a pipe *l*, to the nozzle of No. 4; *b*, and *b'*, are dashers in pans 2, and 4, and have a rotary motion given them by shafting and gearing as represented in the drawing; *d*, is an amalgamator, a vertical section of which is shown by Fig. 2, viz: the outer pan *h*, the bottom of which is depressed to the center and from said center a channel is formed with a downward direction, terminating in a pipe *m*; it is provided with openings as represented by *n*, and a trough or troughs *p*, terminating with nozzles; this pan is set upon a furnace as shown at B; in the pan *h*, is placed another pan *i*, with a flange *j*, connected with the bottom *r*, by pipes *e*, *e*, passing through the bars *w*; the flange has openings in it, as represented at *s*; the inner pan has a rotary motion given it by means of the shaft *t*, and gearing as represented: suspended in the inner pan is a check plate *x*.

Mode of operation.—To operate this machine a brisk fire is made in the furnaces; pan No. 1, is to be filled with Gluyas's or

other caustic alkali, in pan No. 2, is to be put finely pulverized gold or silver ore or tailings, with quicksilver, upon this is poured the liquid alkali from pan No. 1, this mixture is supplied with boiling water from pan No. 3, by means of pipe *k*, and is kept in constant agitation by means of the dasher *b*; from pan No. 2, the mixture passes into pan No. 4, in which is also a portion of quicksilver, and is there made quite thin by the addition of boiling water from pan No. 3, this is also kept in constant agitation by the dasher *b'*, and passes into the amalgamator *d*, and in passing thence is reduced to a still thinner state by water from pan No. 3, leading into the nozzle *a*, by means of the pipe *l*; the outer pan *h*, of the amalgamator is charged with quicksilver, which is kept in a lively state by the fire in the furnace B; the liquid or mixture passes through the pipes *e*, to the quicksilver; the pan *i*, being rotated by means of the shaft *t*, deposits the gold or silver upon the quicksilver with which it becomes amalgamated, the particles of pulverized rock and dirt are washed up through the openings *s*, of the flange, thence pass out of the openings *n*, of the outer pan, and are carried away by the troughs *p*; while the quicksilver and amalgam can be drawn off by means of the pipe *m*.

Having described my invention what I claim therein as new and desire to secure by Letters Patent is:

The relative arrangement of alkali trough No. 1, water trough No. 3, quicksilver troughs No. 2, and No. 4, and revolving amalgamator *d*, upon a furnace (containing three fire flues A, A', B,); the four troughs and the amalgamator relatively communicating with each other by means of nozzles *a*, *a'*, and pipes *k*, *l*, so as to operate in conjunction with each other as and for the purposes set forth.

WM. GLUYAS.

Witnesses:

CHAS. R. BOND,
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