

J. G. SCOTT.
AMALGAMATOR.

APPLICATION FILED APR. 23, 1910.

1,018,448.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

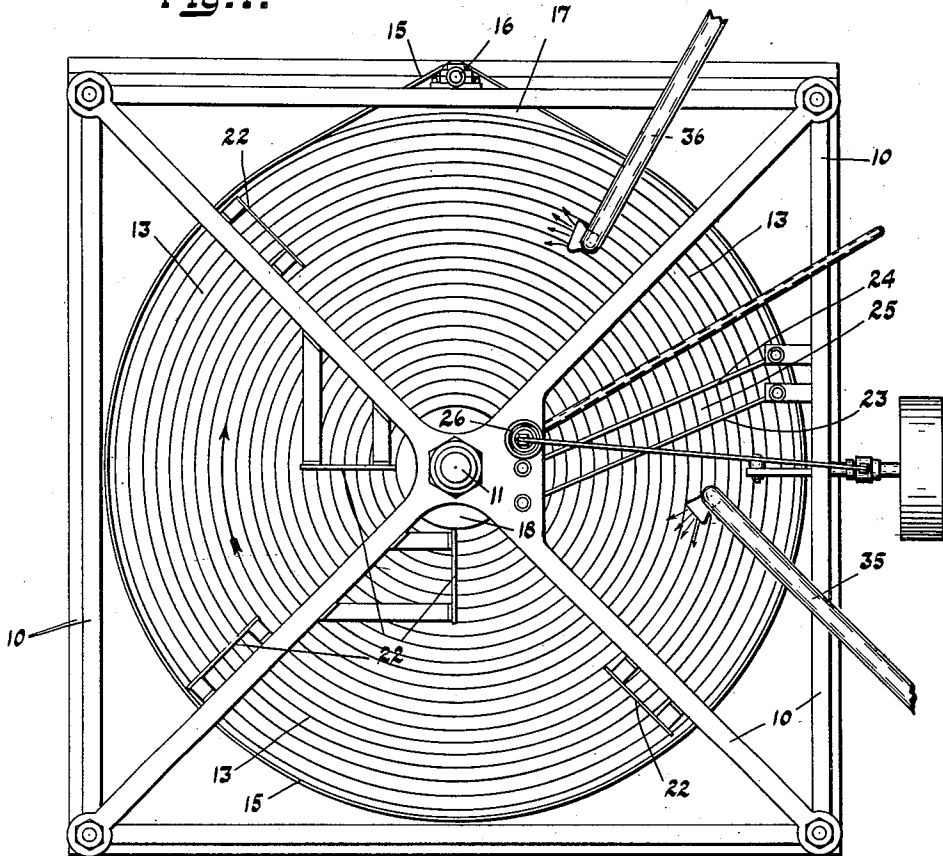
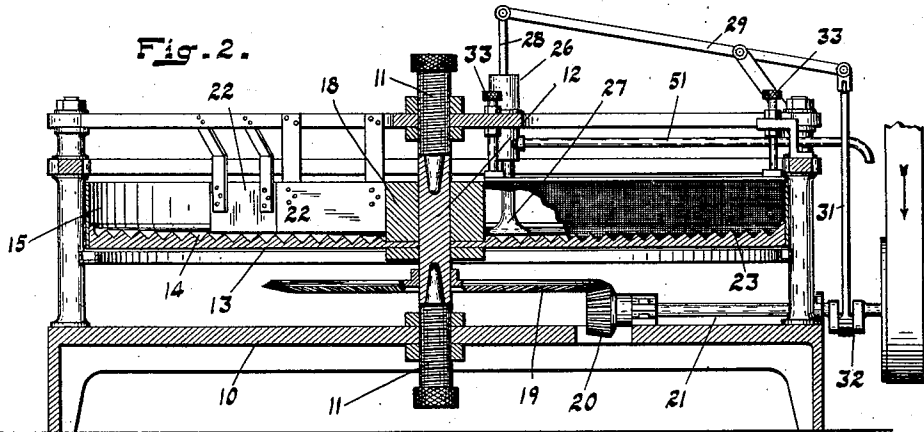


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

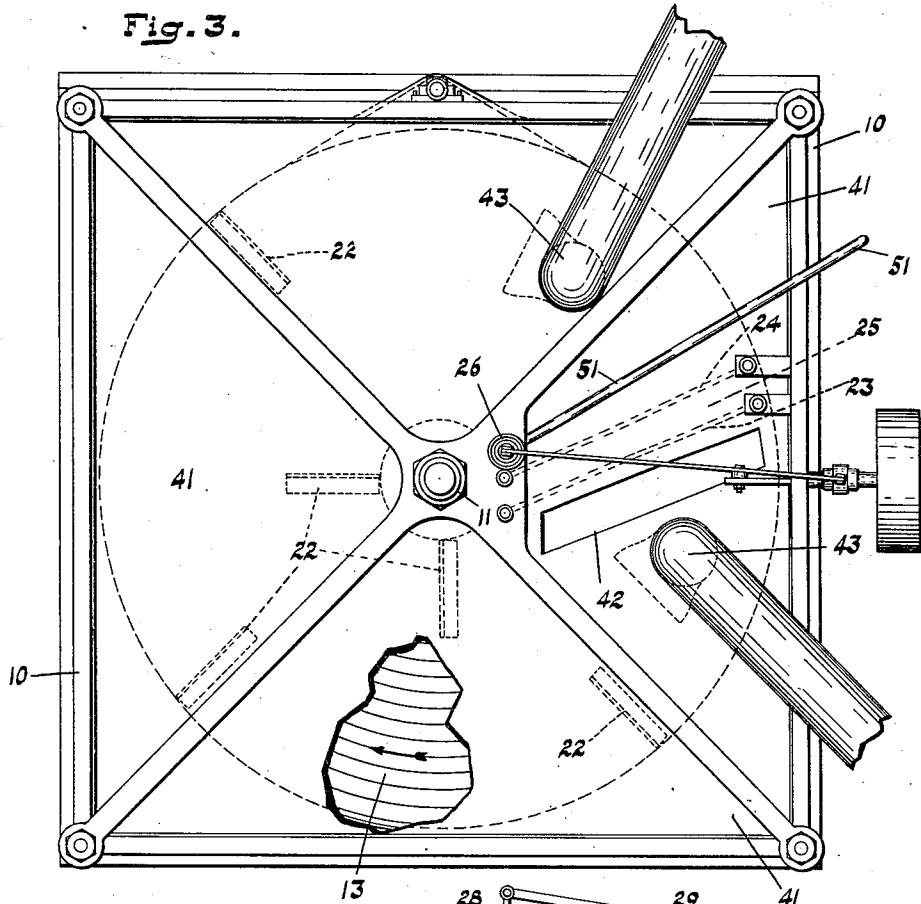
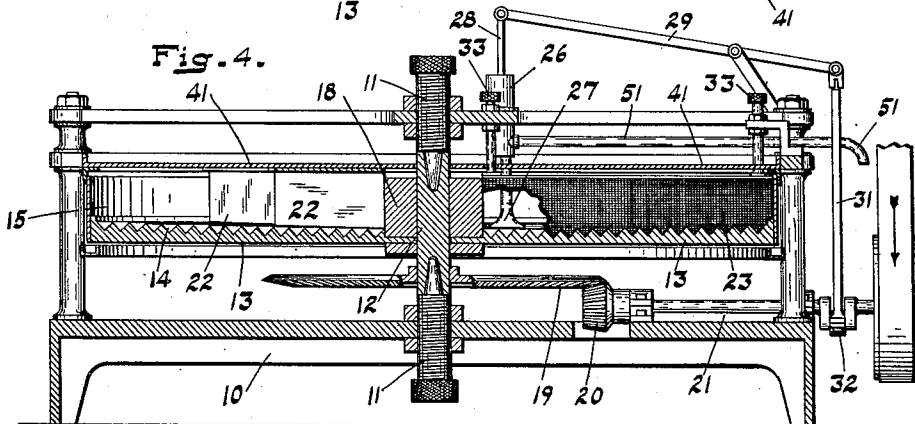


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES G. SCOTT, OF MORGANTOWN, INDIANA.

AMALGAMATOR.

1,018,448.

Specification of Letters Patent.

Patented Feb. 27, 1912.

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To all whom it may concern:

Be it known that I, JAMES G. SCOTT, a citizen of the United States, residing at Morgantown, in the county of Morgan and State of Indiana, have invented a new and useful Amalgamator, of which the following is a specification.

The object of my invention is to produce an amalgamator by means of which precious metals may be separated from their carrying sands.

The accompanying drawings illustrate my invention.

Figure 1 is a plan of a water machine embodying my invention; Fig. 2 a section of the machine shown in Fig. 1; Fig. 3 a plan of an air-blast machine, and Fig. 4 a section of the structure shown in Fig. 3.

In the drawings, 10 indicates a suitable supporting frame carrying adjustable pins 11, 11 between which is journaled a shaft 12 carrying a rotary amalgamating disk 13 the working face of which is serrated, in an ordinary manner, as indicated at 14. It will be understood that the present drawings very greatly exaggerate the depth of the serrations 14. The disk 13 is circular and surrounding said disk, so as to form a vertical wall therefor, is a belt 15 of any suitable material such, for instance, as ordinary leather belting. The belt 15 closely engages the circumference of disk 13 throughout the major portion thereof but at one point is drawn away from the circumference of the disk and passed over a suitable idler 16 so as to thus form an opening 17 through which the sands and the carrying current of water or air may escape. Disk 13 is slightly higher at its edges than at its middle, as indicated in Fig. 2 so that the disk is slightly dished and at its center is provided with a hub 18. The disk 13 is rotated in any suitable manner as, for instance, by means of a gear 19 and a pinion 20 carried by shaft 21.

Mounted above disk 13 and coming down fairly close to its upper face are several baffle-plates 22 which serve to produce eddies in the sand-carrying fluid. Arranged above the disk and extending diagonally across the same from the circumference to hub 18 are two flexible dams 23 and 24. The dam 24 is serrated at its bottom so as to fit within the serrations of the table 13, while dam 23 is brought practically to the crests of the ridges of the table. The two

dams 23 and 24 are slightly separated to form a chamber 25 within which a constant supply of mercury may be maintained. Dam 24 is so located with relation to a radius of the table as to cause material arrested by it to move toward the center of the table. Immediately adjacent the inner end of the dam and the circumference of hub 18 is a pump 26 the suction end 27 of which is broadened and brought close to the working face of the table. The piston rod 28 of the pump is connected in any suitable manner as by lever 29 and pitman 31 with a crank 32 carried by shaft 21. The dams are carried by suitable adjusting screws 33 by means of which they may be adjusted toward and from the working face of the table. In the form shown in Figs. 1 and 2 a water pipe 35 is led to a point above the table in advance of dam 27 so as to direct a stream of water onto the table in the direction of rotation thereof and the water pipe 36 is provided to direct a stream of water in the opposite direction at a point just beyond the opening 17 so as to thus facilitate the outflow of water and sands carried thereby.

The structure shown in Figs. 3 and 4 is substantially identical with that already described except that I provide a cover plate 41 which lies immediately above the upper edge of belt 15 so as to form a reasonably air-tight cover for the table. An opening 42 is provided in this plate immediately in front of dam 23 and in front of this opening an air-blast nozzle 43 leads into the space above the table.

In operation, a suitable supply of mercury is placed within the chamber 25 and the table 13 rotated in the direction indicated by the arrow. The metal bearing sands are then introduced on to the table in front of dam 23 and streams of water or air introduced on to the table. The sand disturbing fluid will be obstructed by the deflectors 22 and the metal bearing sands will be thus intermittingly agitated and allowed to settle so that the precious metals may fall into the mercury which passes out from chamber 25 under dam 23. When the material reaches the opening 17 the belt 15 will move away from the circumference of the table as to permit the egress, while the amalgam will pass to dam 24 by which it will be caused to flow toward the center of the table to pump 26 and the said pump will

withdraw the amalgam from table and discharge it through the discharge pipe 51 to any desired point.

I claim as my invention:

- 5 1. In an amalgamator, the combination of a rotary table, means for supplying amalgamating material thereto, means for rotating said table, a belt engaging the circumference of said table to form a wall therefor, a support over which portions of the belt will be successively carried as the table rotates, said support lying beyond the circumference of the table, a dam arranged to cooperate with said table to cause a movement of the amalgam transversely of the table, and a pump arranged above the table in position to receive the amalgam displaced by the dam.
- 10 2. In an amalgamator, the combination of a rotary table, means for supplying amal-

gamating material thereto, means for rotating said table, a belt engaging the circumference of said table to form a wall therefor, a support over which portions of the belt will be successively carried as the table rotates, said support lying beyond the circumference of the table, and a dam arranged to cooperate with said table to cause a movement of the amalgam transversely of the table.

In witness whereof, I, JAMES G. SCOTT have hereunto set my hand and seal at Morgantown, Morgan county, Indiana, this 18th day of April, A. D. one thousand nine hundred and ten.

JAMES G. SCOTT [L. s.]

Witnesses:

WALTER TAPP,
JAMES P. KELSO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."