

No. 610,764.

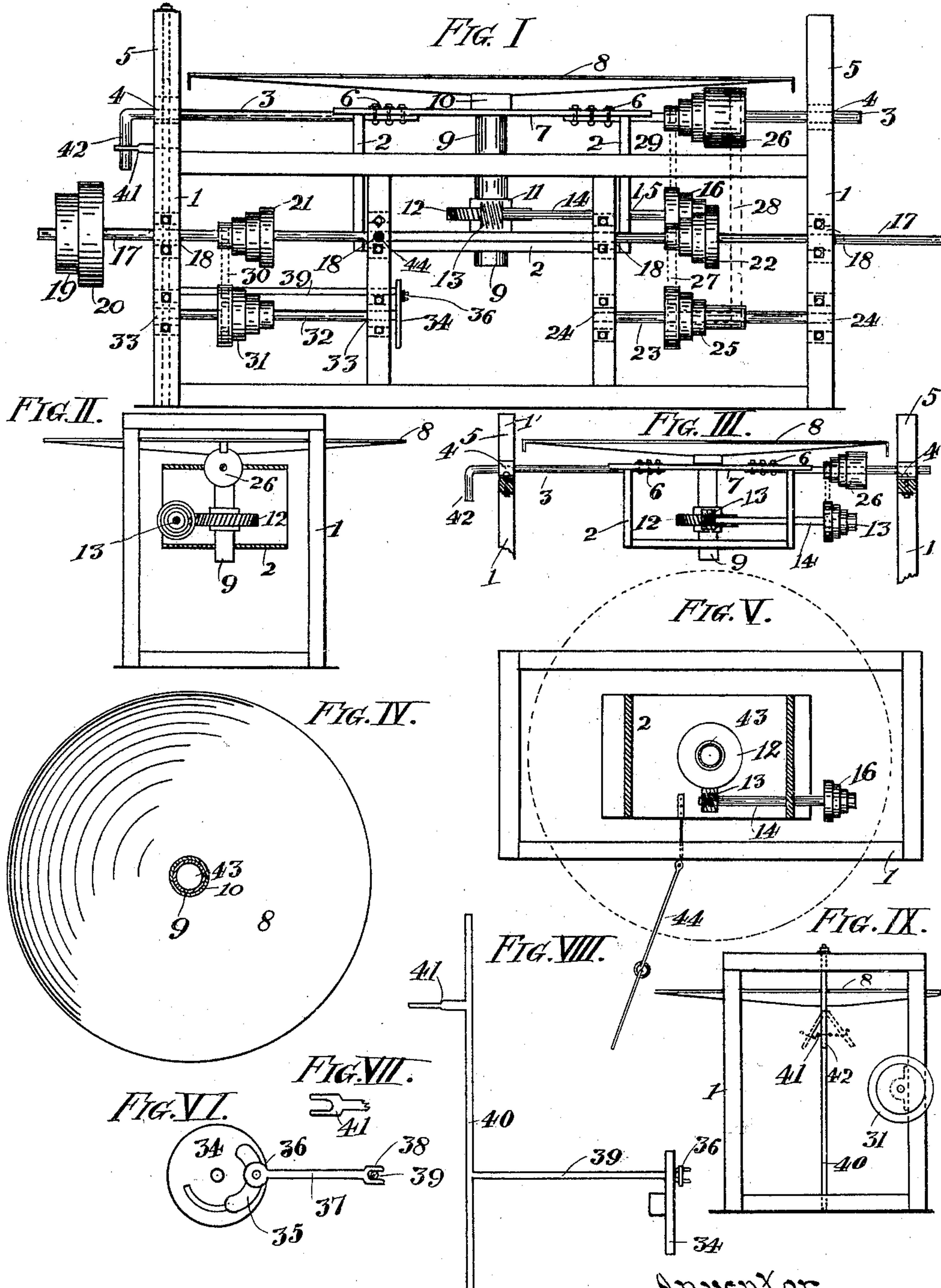
Patented Sept. 13, 1898.

J. MAIT.
CONCENTRATOR.

(Application filed Oct. 27, 1897.)

(No Model.)

2 Sheets—Sheet I.



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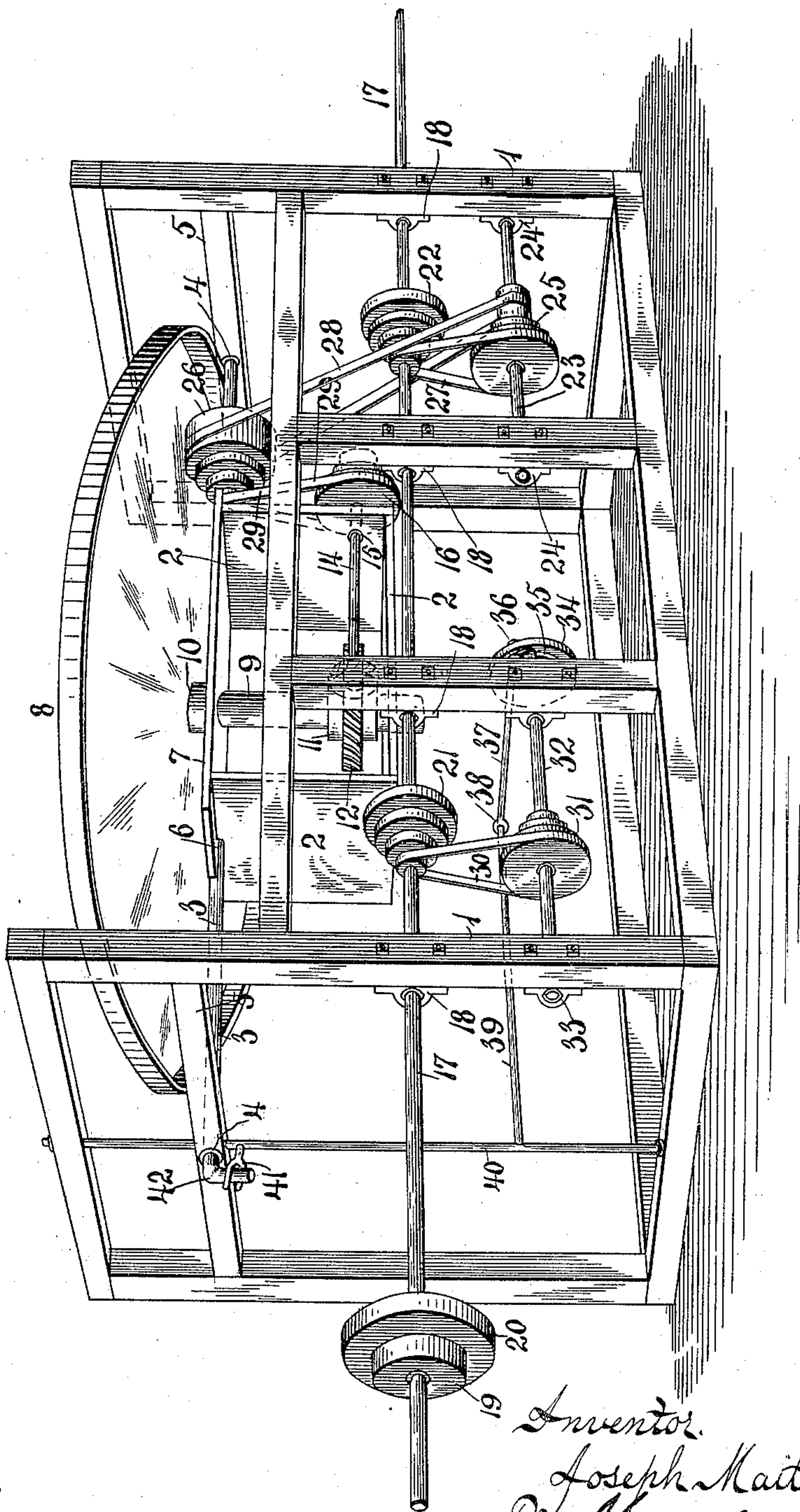
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FIG. X.



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UNITED STATES PATENT OFFICE.

JOSEPH MAIT, OF LOS ANGELES, CALIFORNIA.

CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 610,764, dated September 13, 1898.

Application filed October 27, 1897. Serial No. 656,568. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MAIT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Concentrators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved concentrator which has a rotary movement and is also provided with means for giving it inclination while being operated; and my invention consists in certain features of novelty hereinafter described and claimed.

Figure I represents a side elevation of my improved concentrator. Fig. II is a end view, partly in section. Fig. III is a longitudinal section of the upper part. Fig. IV is a bottom view of the table. Fig. V is a detail horizontal section of the movable frame, the position of the table being indicated by a dotted circle. Fig. VI is a side elevation of the wheel for rocking or inclining the movable table. Fig. VII is a plan view of the fork for rocking the table. Fig. VIII is a side elevation of the rocking shaft and edge view of the operating-wheel. Fig. IX is an end elevation showing the rocking movement of the concentrating-table. Fig. X is a perspective view of the concentrator.

Referring to the drawings, 1 represents a stationary frame in which is suspended a movable frame 2, said movable frame being supported on the stationary frame by means of a rod 3, having its ends movably journaled at 4 in the end posts 5 of the stationary frame. The rod 3 is divided and is bolted at its inner ends by bolts 6 to a supporting-frame 7.

8 represents my improved dish-shaped concentrating-table inclined from the outer edge to the center and provided with a hollow sleeve 9, secured to the table at the center and on the under side of the same.

10 represents a collar surrounding the sleeve 9, said collar resting upon the supporting-frame 7, thus supporting the table on the movable frame 2. The sleeve 9 passes through an opening in the center of the supporting-frame 7 and extends downwardly to

a point beneath the bottom of the movable frame 2.

11 represents a collar situated near the lower end of the sleeve 9, and 12 a worm-gear on said collar, said gear meshing with a smaller worm-gear 13, located on the inner end of a shaft 14, said shaft 14 being supported in the movable frame 2 at 15. The worm-gears 12 13 serve to rotate the movable concentrating-table 8. On the opposite end of shaft 14 I place a stepped pulley 16, said pulley being fixed to the shaft.

17 represents the operating-shaft, suitably journaled at 18 to the stationary frame 1 and having pulleys 19 20 on its outer end, with which a power mechanism for the operating-shaft may be connected.

21 represents a stepped pulley fixed to the shaft 17 near one of its ends. 22 represents a stepped pulley fixed to the shaft 17 near its opposite end.

23 represents an auxiliary shaft journaled at 24 to the frame and having a stepped pulley 25 fixed thereon.

26 represents a stepped pulley loosely mounted upon the rod 3, which supports the concentrating-table.

27 represents a belt connecting the pulley 22 with the pulley 25.

28 represents a belt connecting the pulley 25 with the pulley 26, and 29 represents a belt connecting the pulley 26 with the pulley 16 on the end of the shaft 14, which rotates the concentrating-table, said pulleys and their manner of connection serving to reduce the speed from the operating-shaft to the concentrating-table.

The pulley 21 is connected by belt 30 to a stepped pulley 31, fixed to an auxiliary shaft 32, said shaft 32 being journaled at 33 to the stationary frame. On the inner end of shaft 32 I place a wheel 34, having the usual segmental aperture 35, in which works a wrist-pin 36 on one end of an arm 37. The outer end of the arm 37 is provided with a fork 38, which embraces one end of the rod 39. The opposite end of the rod 39 is connected with a vertical rock-shaft 40, which is suitably supported by the stationary frame. Near the upper end of the rock-shaft 40 I provide a fork 41, extending at right angles with the

body of the shaft. The fork 41 embraces a crank 42 on the outer end of the supporting-rod 3.

In operation as the wheel 34 is rotated it
 5 will give an endwise movement to the arm 37, and as the same is connected with the rod 39 it will give a horizontal sidewise movement to the rod 39, and a pivotal movement will be thus imparted to the vertical rock-shaft 40.
 10 As the rock-shaft 40 turns in its bearings it gives a sidewise movement to the fork 41, and as the fork 41 engages the crank 42 of the rod 3 said rod 3 is given a rocking movement in its bearings, (see dotted lines, Fig. IX,) and as the rod 3 is connected with the movable frame which supports the concentrating-table it will be seen that a rocking movement is given to the concentrating-table while the machine is in operation, thus facilitating the
 20 handling of the pulp or crushed quartz which may be deposited upon the concentrating-table.

43 represents an aperture in the center of the concentrating-table, which leads down
 25 through the hollow sleeve 9 and through which the concentrates pass as they gradually travel to the center of the concentrating-table.

44 represents a stay-rod for limiting the swing of the movable frame.

30 I claim as my invention—

An ore-concentrator comprising a suitable framing, a swinging frame, a divided rod journaled on the framing, the supporting-frame mounted on the inner ends of the divided rod having a crank and whereby the swinging
 35 frame is suspended, the loose pulley mounted on the rod, the table mounted on the supporting-frame, having a discharge-tube provided with a worm-wheel within the swinging frame, the shaft journaled in the swinging frame
 40 and carrying a worm meshing with the worm-wheel, a pulley fixed to the worm-shaft and connected with the rod-pulley, the vertical rock-shaft having a fork engaging the crank on the rod, and provided with a lateral rod,
 45 an auxiliary shaft provided with a fixed pulley and a wheel having a wrist-pin, an arm connecting the wrist-pin with the lateral rod, a counter-shaft having a fixed pulley connected with the rod-pulley, and the driving-
 50 shaft having fixed pulleys connected with the pulleys of the auxiliary and counter shafts; substantially as described.

The foregoing specification signed at Los Angeles, California, this 21st day of October, 55 1897.

JOSEPH MAIT.

In presence of—
 J. W. KEMP,
 JAS. E. KNIGHT.