

E. B. THOMAS.  
CONCENTRATOR.  
APPLICATION FILED JAN. 27, 1909.

944,924.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.

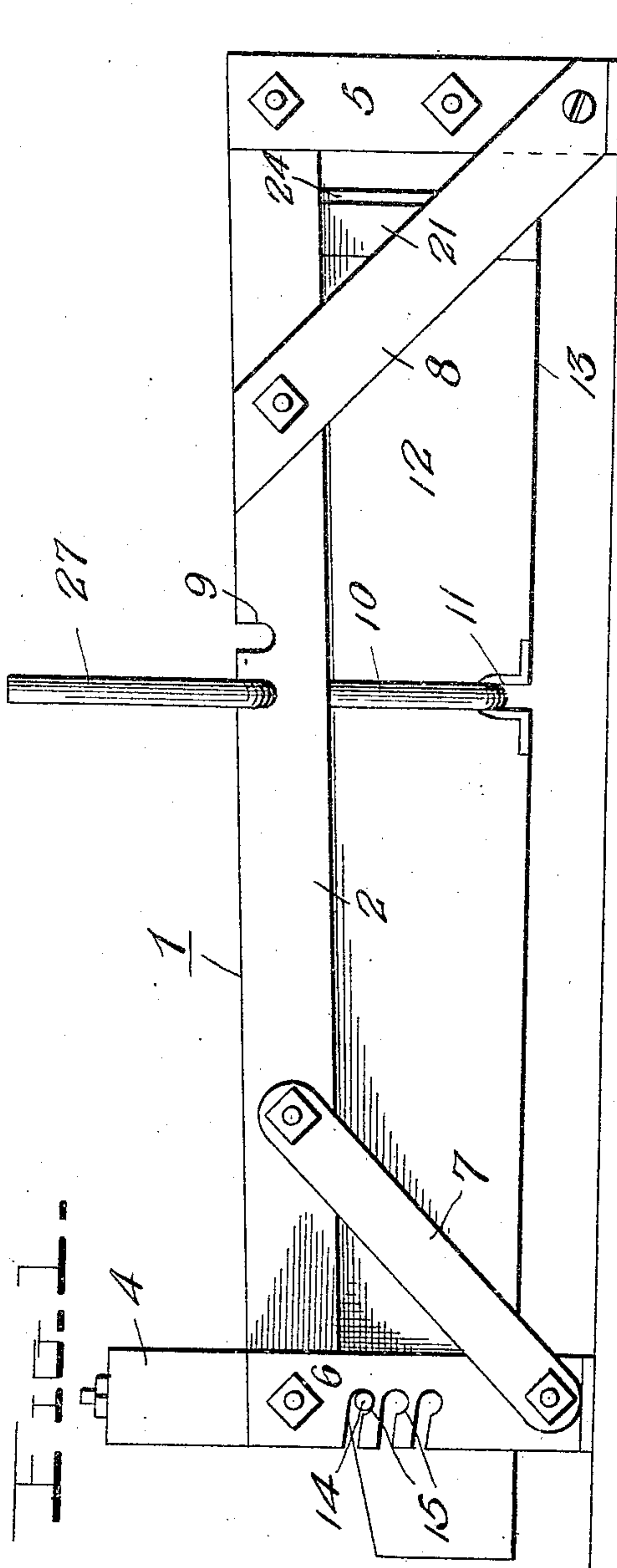
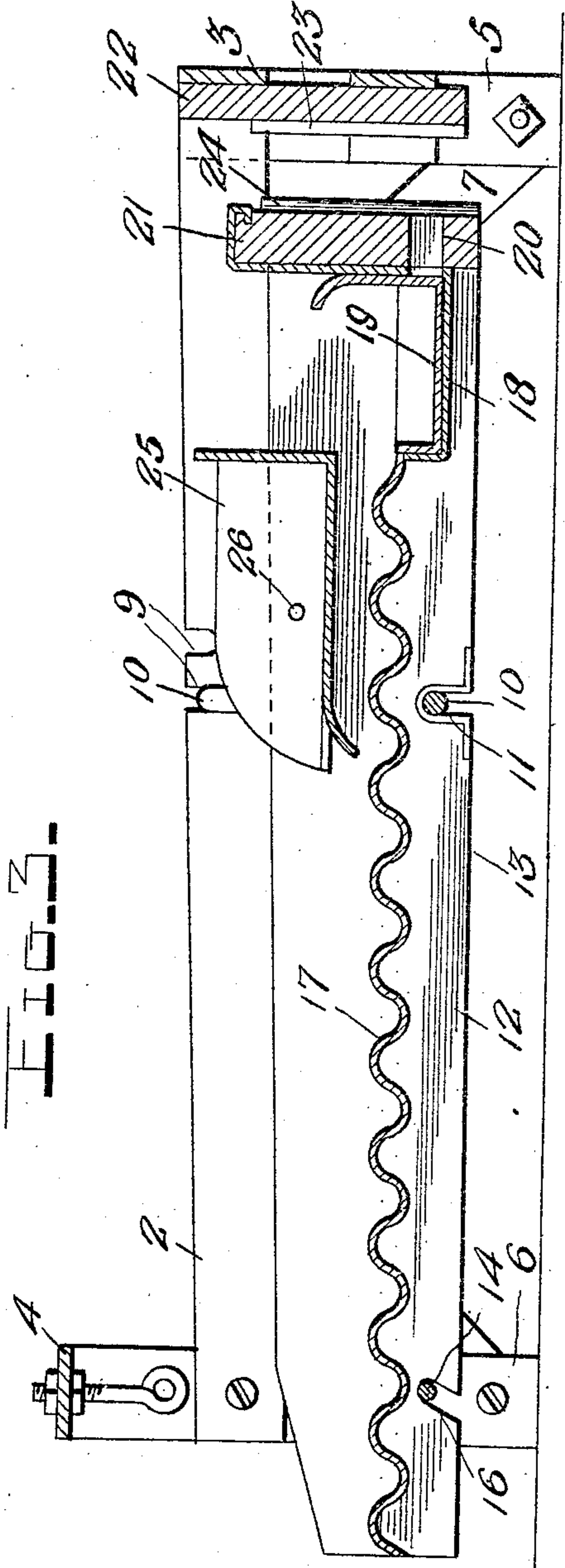


FIG. 2.



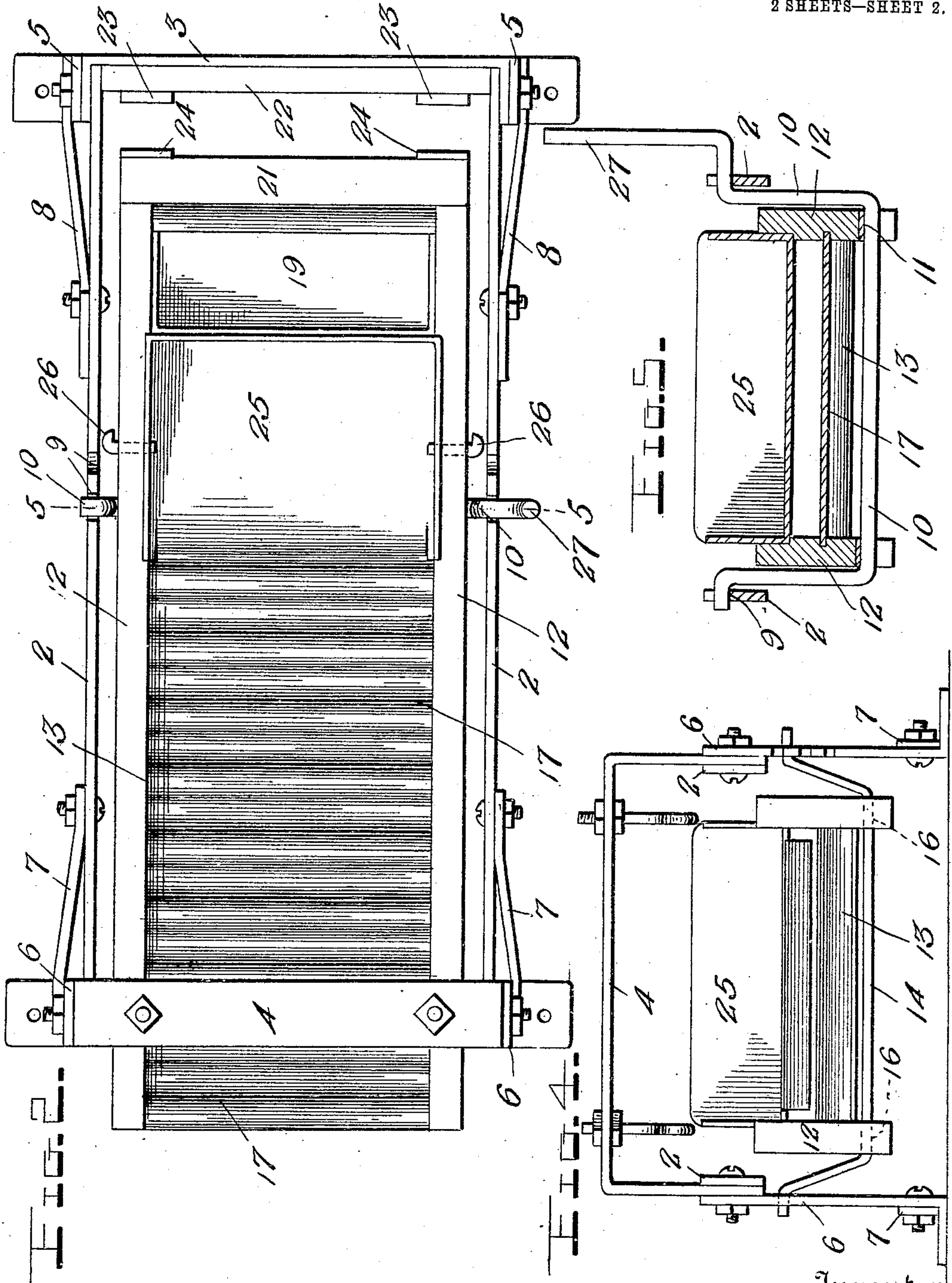
Witnesses  
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Inventor  
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Attorneys



# UNITED STATES PATENT OFFICE.

EPHRAIM B. THOMAS, OF SANTA ROSA, CALIFORNIA.

## CONCENTRATOR.

944,924.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed January 27, 1909. Serial No. 474,464.

*To all whom it may concern:*

Be it known that I, EPHRAIM B. THOMAS, a citizen of the United States, residing at Santa Rosa, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Concentrators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to concentrators and particularly to that type employing washing tables which are adapted to reciprocate. The object of the invention is to provide a simple, inexpensive concentrator which may be readily transported from place to place so as to be adaptable for prospecting, beach and pocket work.

A further object of the invention is the provision of means for forcing the concentrates under the shovel pan into the concentrates receptacle and for causing them to travel uphill against the action of gravity and the flow of water.

A still further object of the invention is the provision of means for adjusting the concentrator table so that a longer or shorter reciprocation may be obtained and to also adjust the same so that the discharge end of the table may be adjusted as to height with respect to the remaining portion thereof.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation, Fig. 2 is a top plan view, Fig. 3 is a central longitudinal section, Fig. 4 is a front end elevation, and Fig. 5 is a transverse section on the line 5—5 of Fig. 2.

Referring more especially to the drawing, 1 represents the supporting frame which is composed of side members 2 connected at the rear end by the yoke post 3 and at the forward end by a vertically extending yoke 4. The frame is supported upon suitable legs 5 and 6 which are braced to the side members by struts 7 and 8. The side members 2 are provided at approximately midway of their length with a plurality of notches 9 adapted to receive the supporting and pivoting bail 10 whose lower crank-shaped

portion engages the notches 11 formed in the side members 12 of the concentrator table 13. This bail supports the table adjacent its middle and its forward end is held upon a bail 14 which is adjustably mounted in the apertures 15 arranged in the legs 6. The lower end of the bail engages notches 16 formed in the side members 12 and is held in said notches by reason of the weight of the front end of the table.

The bed 17 of the table is constructed of corrugated material and extends back adjacent the rear end of the side members where there is provided a pocket 18 for the reception of the concentrates receptacle 19. These corrugations are shown on a greatly exaggerated scale being in practice of such size as to permit the concentrates to readily pass thereover to the concentrates receptacle under the impetus given when the table is dumped. This concentrates receptacle, of course, fills with water and the concentrates and the water in overflowing communicate with a duct 20 arranged in the back piece 21. The receptacle is so constructed that it may be removed periodically to discharge the concentrates.

In order that the gold may get its proper impetus up the inclined table bottom, I provide a buffer plate 22 upon the face of which is secured suitable buffers 23 which are adapted to be engaged by similar buffers or cushions 24 connected to the ends of the back piece 21.

Arranged in between the sides of the concentrator table is a shoveling board or pan 25 which is pivoted by means of the pins 26 with a preponderance of its weight in the rear of the pivots so as to normally tilt backward and thereby allow only a certain predetermined quantity of ore to discharge therethrough at a time.

The upper end of the bail 10 is provided with a manipulating lever 27 by which the table can be manipulated manually or to which can be attached a lever or piston controlled by any suitable source of power. In operation this lever is operated to bring the rear end of the table in forcible engagement with the buffers so that the heavier particles of ore will travel up the inclined table after being washed from the shoveling board to the corrugated base. The momentum of the heavier gold bearing material given to it by the vibrating table is sufficient to carry it backward and upward over the riffles or cor-



rugations into the concentrates receptacle, while the momentum given the lighter material not being able to overcome both gravitation and the flow of water is carried down  
5 and out the discharge end over the inclined base. When heavier material or ores having considerable lead or other heavy metals are being treated the forward end of the pan is lowered to give the machine sufficient opportunity to operate.

10 From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

15 Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claim.

20 Having thus described and ascertained the nature of my invention, what I claim as

new and desire to secure by Letters-Patent, is—

25 A concentrator comprising a frame having end uprights and inclined and slotted side bars, a bumping concentrating table, a notch therein, a crank adapted to engage the slots and the notch to adjustably support the table, notches in the front uprights, a crank for adjustably supporting the forward end of the table, by engagement with the notches on the uprights, a cushioned bumper at the rear end of the table, and  
30 means constituting an extension of the first mentioned crank for reciprocating the table whereby the concentrates are caused to travel in a direction opposite to their feed.

In testimony whereof I have hereunto set  
40 my hand in presence of two subscribing witnesses.

EPHRAIM B. THOMAS.

Witnesses:

ALVA C. BOWDEN,  
R. A. GEORGE.