No. 649,796. Patented May 15, 1900.

A. Z. BALDENEBRO.

AMALGAMATOR.

(Application filed Sept. 14, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

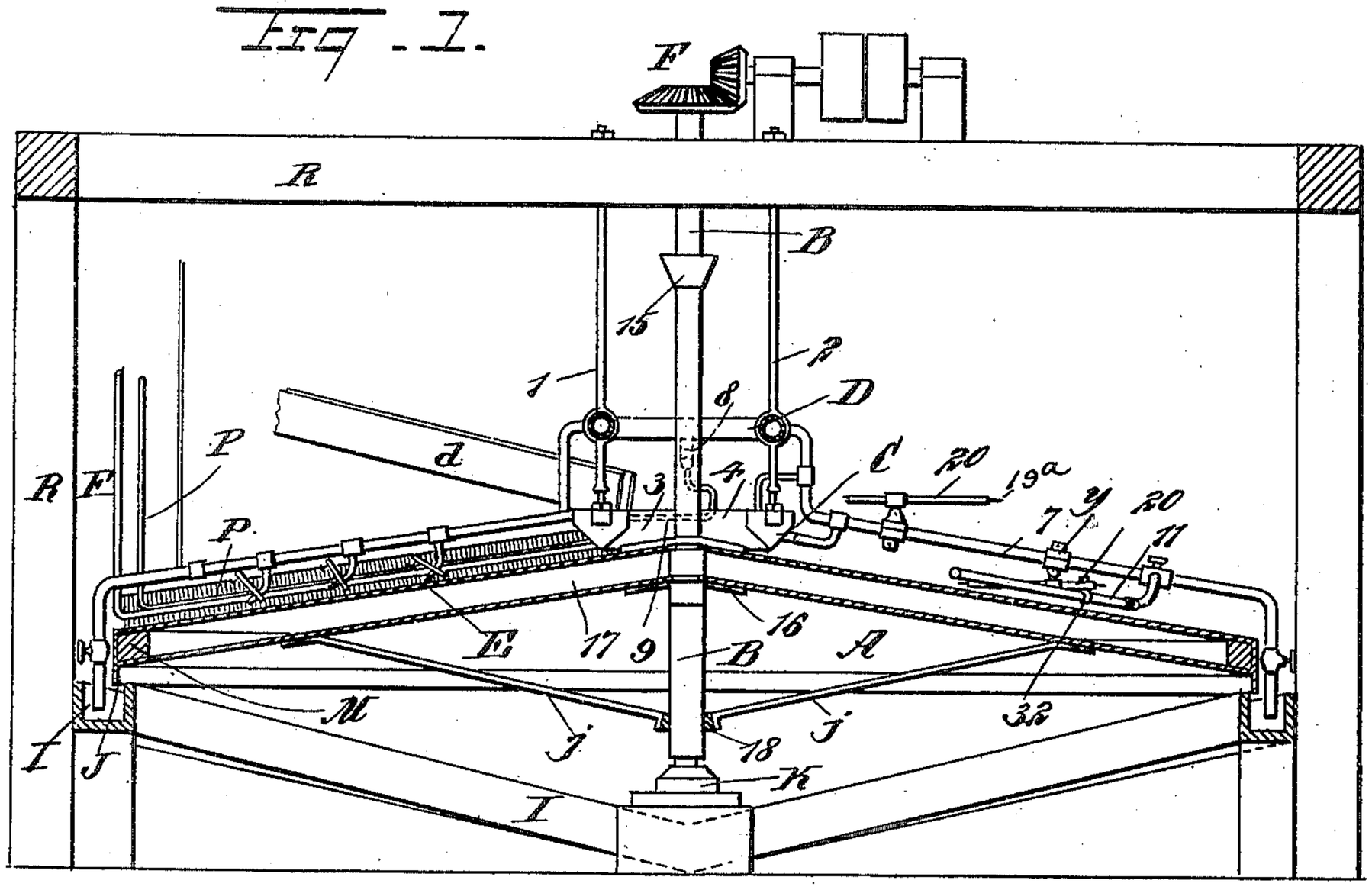


Fig. 9.

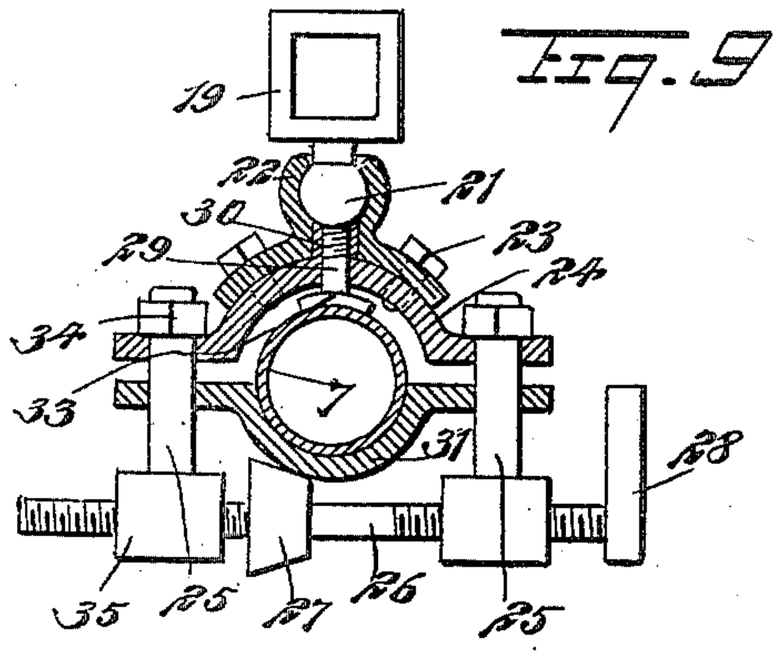


Fig. 5.

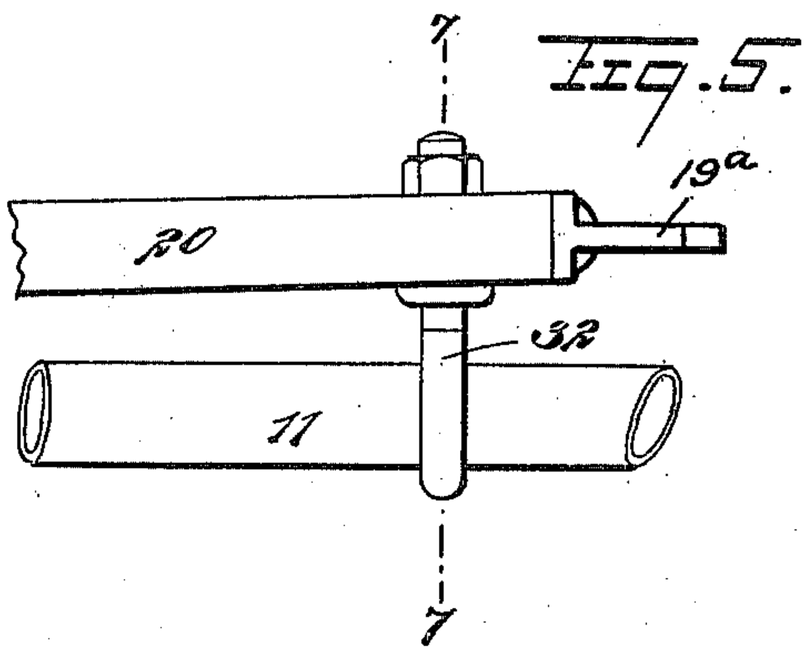


Fig. 7.

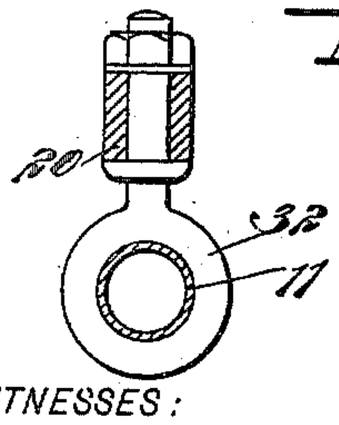


Fig. 8.

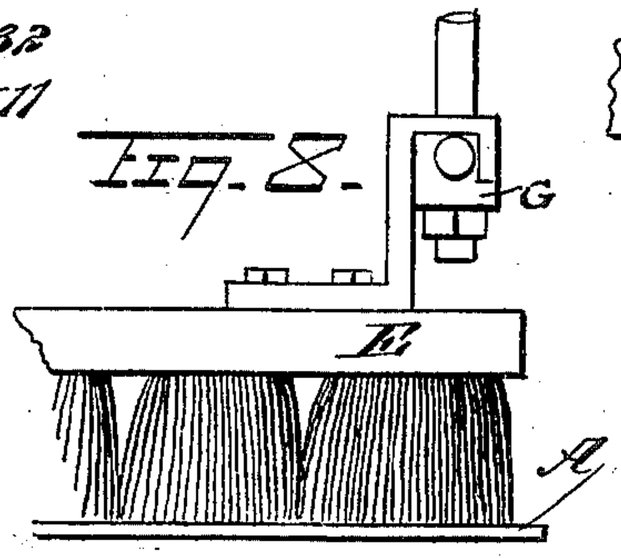
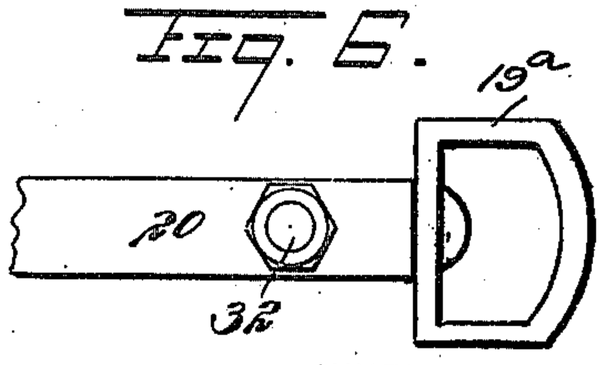


Fig. 6.



WITNESSES:

H. Walker

John Lotka

INVENTOR

Alfonso Jevadat Baldenebro.

BY Munn & Co

ATTORNEYS.

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Fig. 10.

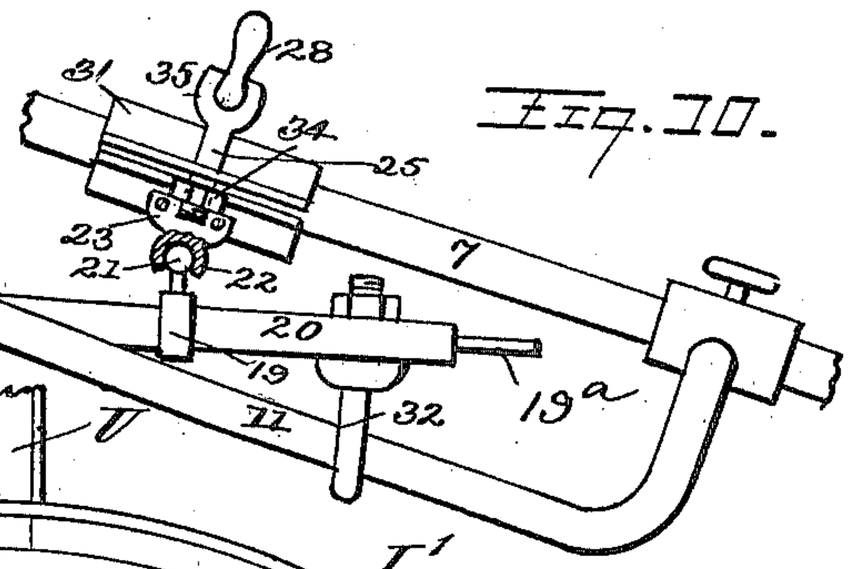

Fig. 2.

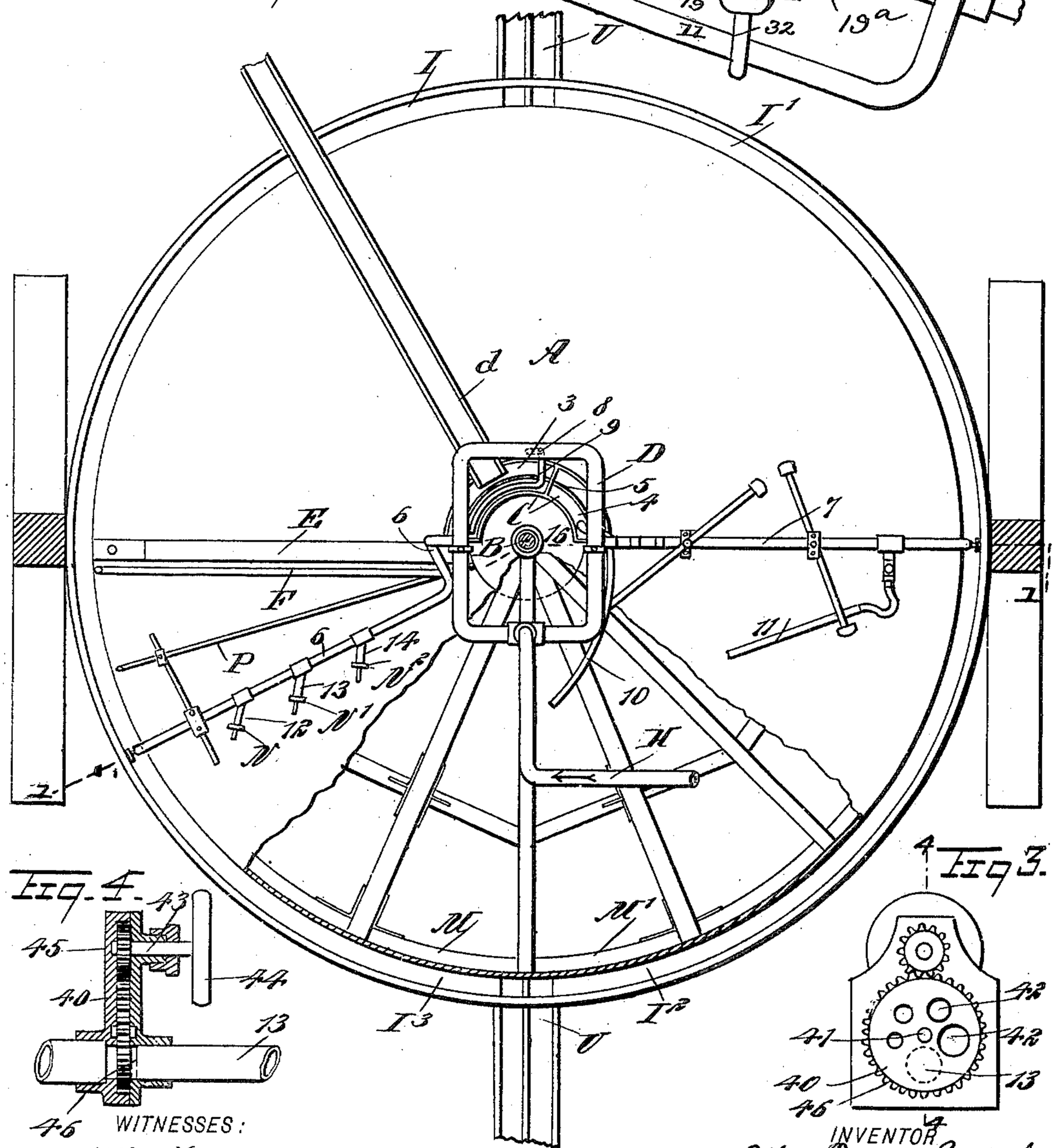

Fig. 4.

Fig. 3.

WITNESSES:

H. Walker

John Lonka

INVENTOR

Alfonso Zevada Baldenebro

BY Munn & Co

ATTORNEYS.

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A. Z. BALDENEBRO.

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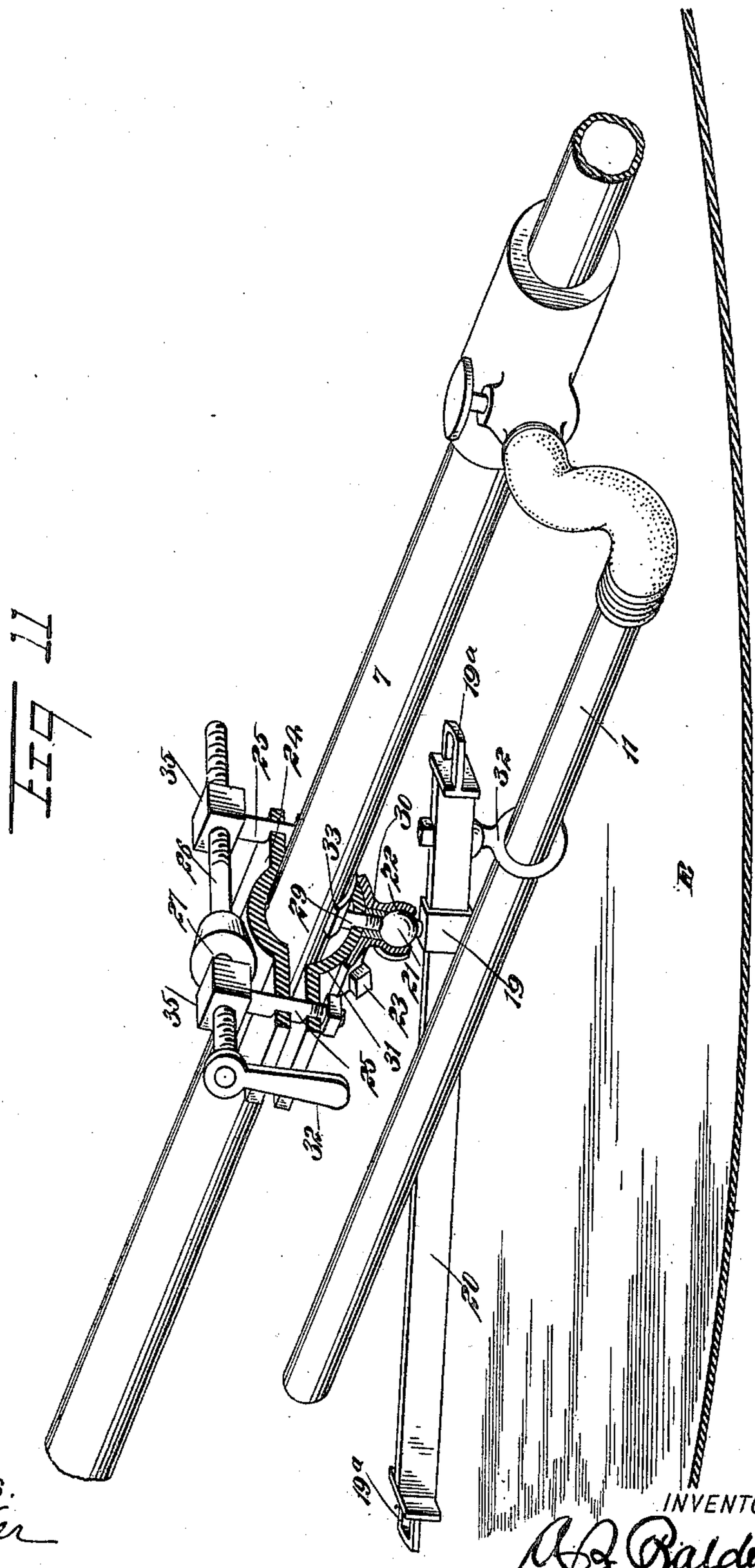
3 Sheets—Sheet 3.



WITNESSES.

H. L. Walker

John Lotka

INVENTOR

A. Z. Baldenebro

BY

Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALFONSO ZEVADA BALDENEBRO, OF MEXICO, MEXICO.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 649,796, dated May 15, 1900.

Application filed September 14, 1898. Serial No. 690,941. (No model.)

To all whom it may concern:

Be it known that I, ALFONSO ZEVADA BALDENEBRO, of the city of Mexico, in the Republic of Mexico, have invented a new and Improved Rotary Amalgamator, of which the following is a full, clear, and exact description.

My invention relates to the treatment of gold ores, and has for its object to provide an improved apparatus which will be comparatively simple in construction and efficient in operation.

The invention will be fully described hereinafter and the features of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an elevation of the rotary amalgamator, with parts in section, on the line 1 1 in Fig. 2. Fig. 2 is a plan thereof. Fig. 3 is a detail of the water-supply valve. Fig. 4 is a section on the line 7 7 of Fig. 3. Fig. 5 is a broken detail of the mechanism for adjusting the water-discharge tubes. Fig. 6 is a plan thereof. Fig. 7 is a section on the line 10 10 of Fig. 5. Fig. 8 is a detail of the stationary brush. Figs. 9 and 10 are sectional details of the mechanism for adjusting the water-discharge tubes, Fig. 9 showing parts in section substantially on the line 9 9 of Fig. 1; and Fig. 11 is a perspective view of this adjusting mechanism and its connections with part broken away.

The rotary amalgamator comprises a rotary table A, inclined toward its periphery and secured to the shaft B, which may be rotated by means of the driving-gear F, and rests upon a step-bearing K. The shaft may be provided with a funnel 15 to collect any drippings of oil or the like. Adjacent to the top of the table A is located an approximately-semicircular channel C, tapering toward the bottom, at which it is open longitudinally and supported by means of bars 1 and 2, secured to the frame R of the amalgamator. The said bars also carry a rectangular pipe D, connected with a water-supply pipe H. The channel C and pipes D and H are stationary. The channel C is divided into two sections 3 and 4 by a vertical partition 5. From the rectangular pipe D extends a series of approximately-radial pipes, such as 6, 7, and 8. From the pipe 8 branches off a pipe 9 and from the pipe 7 branch pipes 10 and 11, adjustable, as will be described hereinafter. The pipes 6, 7, and 8, beyond the periphery J of the table A, are adapted to discharge into a channel or trough I, which extends around the table and dips toward the oppositely-arranged points U, at which are arranged the outlet-chutes for the material flowing off the table A. The pipe 6 has small branch pipes 12, 13, and 14, provided with regulating-valves N N′ N^2 of the construction shown in Figs. 3 and 4. According to this construction a disk 40 is mounted to rotate about an axis 41, located eccentrically in relation to the pipe 13 and provided with a series of graduated openings 42, so arranged as to successively register with the passage of the pipe 13 when said disk 40 is turned about the axis 41. The rotary movement of the disk is effected by means of a hand-wheel 44 upon a shaft 43, carrying a gear-wheel 45, which meshes into the gear-wheel 46, forming a part of the disk 40. It will be obvious that by this means the rate of the discharge of the water may be regulated.

The table A consists of copper covered with amalgamated silver. The plate is held upon the shaft B by means of a clamping-support 16 and is further supported by means of braces *j*, which are carried by a collar 18 on the shaft B. The peripheral section of the table is strengthened by a rim M, and connection from the center to the periphery is made by means of T-beams 17.

In order to adjust the angle of the pipes 10 and 11, I employ the universal joint shown in Figs. 5 to 7 and 9 and 10. Upon the pipe 7 is secured a clamp consisting of two sections 24 and 31, held together by means of screw-bolts 25, having nuts 34, and screw-threaded sockets 35. The section 31 is capable of sliding up and down on the bolts 25. To the upper section 24 is secured by screws 23 a socket 22, which receives a ball 21, rigid with a guide-frame 19. This guide-frame 19 receives loosely an arm 20, which is adapted to slide therein. In the screw-threaded sockets 35 of the bolts 25 is adapted to turn a screw-shaft 26, provided with a crank-handle 28 and with a con-

ical or wedge-shaped projection 27, which is adapted to engage the lower section 31 of the clamp. The upper section 24 of the clamp is apertured to receive the screw projection 29 of a shoe 33, adapted to engage the pipe 7. The screw engages a sleeve 30, arranged within the socket 22, and the screw is also adapted to engage endwise the ball 21, located in said socket. It will be understood that by turning the crank-handle 28 the sections 24 and 31 can be drawn tight upon the pipe 7 or freed therefrom in such a way as to allow the clamp to turn upon the shaft, the ball 21 allowing the guide 19 and the bar 20 therein to turn relatively to the clamp. Furthermore, the clamp can be moved longitudinally of the pipe 7. The connection between the bar 20 and the pipe 10 or 11 is made as shown in Figs. 5, 6, and 7—that is, the bar 20 has connected to it a screw-eye 32, which receives the pipe 11, as shown.

As shown in Fig. 1, the clamps 24 31, with the guide 19 connected to the clamp member 24 by the universal joint, as described, may be attached to the pipe 7, with the said guide either above the pipe 7 (as shown toward the center) or below the same, (as shown toward the periphery.) Fig. 9 shows the former arrangement, while the latter arrangement (or parts of it) is represented in Figs. 5, 6, 7, 10, and 11. A handle 19^a may be attached to the rod 20 to allow the same to be readily moved. It will be obvious, however, that Fig. 9 shows exactly the same construction as the other figures, only in a different position or arrangement. One or the other position will be used, according to the desired distance from the branch pipe 11 to the table proper.

In addition to the parts above enumerated the rotary amalgamator comprises a brush E, mounted along one of the radii of the table A and adjustable toward and from the same, the brush being mounted to slide vertically upon a stationary guide G, also a pipe P, through which mercury may be discharged upon the table A, and a pipe F for supplying potassium cyanid.

In operation the material arriving at the feed-channel *d* runs into the channel C, and escaping through the bottom thereof is spread upon the table A, and owing to the rotation of the table runs down the same upon spiral lines, during which travel it is subjected to the action of streams of water delivered from the various water-nozzles and also to the action of mercury issuing from the pipe P. Furthermore, the amalgamated surface of the plate A will retain a very large proportion of valuable material. The potassium cyanid will dissolve some of the gold and the solution may be treated in any approved manner.

Before the material is allowed to flow upon the table A said table is cleaned by allowing potassium cyanid to flow over it and then amalgamating the table. The brush E is lowered each time it is desired to clean the table A during its rotation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the rotary amalgamated table, the stationary water-pipe above it, a clamp embracing said pipe, a shaft journaled in bearings rigidly connected with one clamp member, a wedge projection located upon said shaft and adapted to engage the other clamp member, a guide having a universal joint connecting it with the clamp, a rod slidable in said guide, a branch pipe communicating with said water-pipe but movable relatively thereto, and a supporting connection between said rod and the branch pipe.

2. The combination of the amalgamated rotary table, the stationary water-pipe above it, a movable branch pipe attached to said water-pipe, a clamp secured to the water-pipe, a guide connected with said clamp by a universal joint, and a rod having a supporting connection with the branch pipe, and arranged to slide in said guide.

ALFONSO ZEVADA BALDENEBRO.

Witnesses:
H. F. BENNETT,
ANDREN O. BARLOW.