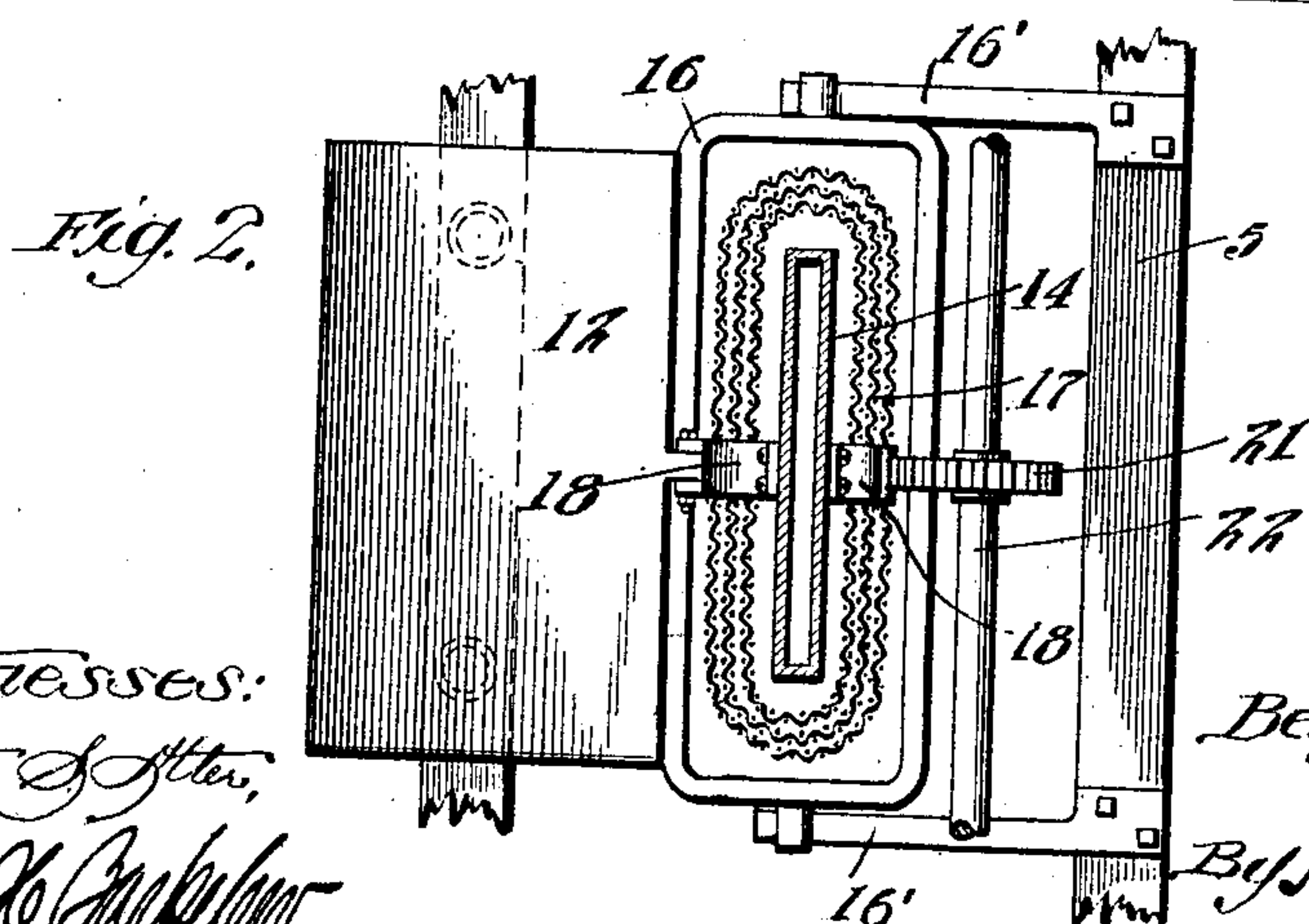
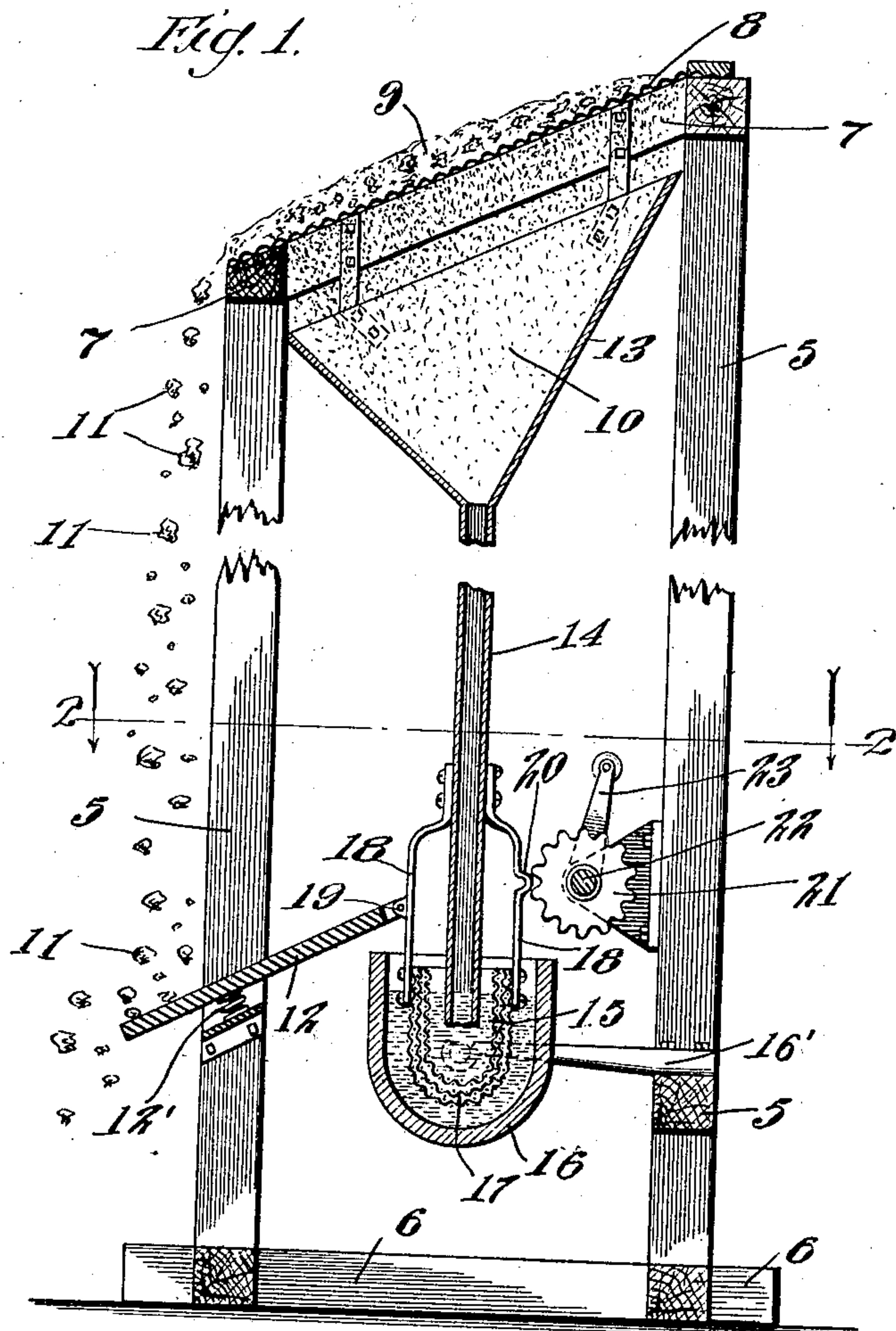


No. 897,975.

PATENTED SEPT. 8, 1908.

B. F. GEIGER.
AMALGAMATOR.

APPLICATION FILED OCT. 7, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

BENJAMIN F. GEIGER, OF LOS ANGELES, CALIFORNIA.

AMALGAMATOR.

No. 897,975.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed October 7, 1907. Serial No. 396,152.

To all whom it may concern:

Be it known that I, BENJAMIN F. GEIGER, a citizen of the United States, residing at Los Angeles, county of Los Angeles, State of California, have invented new and useful Improvements in Amalgamators, of which the following is a specification.

My invention relates to an amalgamator for black sand gold or gold in similar condition and the prime object thereof is to provide a device which will continuously amalgamate the free gold contained in black sand or the like in a simple and efficient manner.

A further object is to provide a device which will separate the amalgamated gold from the sand or other material, allowing the sand to pass off and saving the amalgamated gold.

A further object is to provide a novel form of agitator which aids in the separation of the gold from the sand.

I accomplish these objects by means of the device described herein and illustrated in the accompanying drawings, in which:—

Figure 1.— is a sectional elevation of my improved amalgamator. Fig. 2.— is a sectional plan of the same taken on line 2—2 of Fig. 1.

Referring to the drawings 5 designates an upright frame provided with a base 6 and a frame 7 on its upper end. Frame 7 is covered by a screen 8 which may be of any fineness of mesh desired and upon which the material which contains the gold is thrown as at 9. The finer portions of the material pass through the screen along with the gold contained therein as at 10 while the coarser portions 11 pass over the screen and strike upon a board 12 whose outer end is supported by a spring 12' for a purpose hereinafter described.

Leading downwardly from the bottom of a feed hopper 13, directly beneath screen 8, is a tube 14 which is preferably constructed with an elongated rectangular cross section as shown in Fig. 2. The lower end of this tube dips into mercury 15 in a mercury cup 16 which is supported on brackets 16' secured to frame 5. The lower end of tube 14 projects a slight distance below the surface of the mercury and its height is sufficient so that the weight of the material therein forces such material through the mercury to a point below the end of the tube and the sand, on floating upwardly therein, will not again pass into the tube.

Around the end of tube 14 is an agitator 17 constructed of a series of basket like structures one within the other and composed of wire screen. This screen is preferably of a slightly larger mesh than screen 8 and both may be of any mesh which proves most convenient for the class of material to be handled. Agitator 17 is supported by flat springs 18 which pass upwardly out of the mercury cup and are secured at their upper ends to tube 14. The inner end of board 12 is pivotally connected as at 19 to one of springs 18 so that the material falling on the outer end of the board will cause vibrations of the agitator. The other of springs 18 is provided with a projecting portion 20 which is adapted to engage the teeth of a toothed wheel 21 mounted on shaft 22, which shaft is provided with a crank 23, by means of which it may be rotated. By rotating wheel 21 it will be manifest that a vibratory motion is imparted to the agitator from the same as well as from the weight of the falling material 11. Either or both of these devices may be utilized to vibrate the agitator, the manual device being useful in case material is being treated which contains few or no large bodies.

In the operation of my amalgamator the material is thrown upon the screen as before described, the finer portions thereof passing down tube 14 into the mercury in the cup. The weight of the column of material is sufficient to force the fine material containing the gold through the mercury to a point below the lower end of the tube, and, upon rising, such material comes to the surface of the mercury outside the tube. The tube is made of a narrow cross section in order to facilitate this action and may be slightly widened at the bottom to avoid choking. The amalgamated gold is separated from the sand on account of the difference in specific gravity between the two, the sand rising to the top of the liquid and the gold sinking below the sand. The constant vibration of the agitator facilitates the separation of the gold from the sand as it will loosen any particles which happen to stick together. It will be manifest that as the volume of material in the mercury cup is increased to the point of overflowing the sand on the surface of the mercury will flow over the edge of the cup. Thus it will be seen that my device is capable of continuous operation, or until the mercury in the cup is completely utilized for the amal-

gation of the gold, while the refuse products are constantly thrown off from the cup.

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

1. An amalgamator comprising a frame having an ore screen mounted thereon, a chute leading from beneath said screen, an amalgamating cup around the end of said chute, an agitator within said cup, and a resiliently supported plate connected with said agitator, said plate adapted to receive upon it the coarse refuse from said screen.

2. An amalgamator comprising a frame having an inclined screen mounted thereon, an amalgamating cup mounted in said frame below said screen, a chute adapted to lead the fine screenings from said screen to said cup, and an agitator projecting into said cup, said agitator adapted to be vibrated by the falling of the coarse refuse from said screen thereon.

3. An amalgamator comprising a frame having a screen mounted thereon, an amalgamating cup mounted beneath said screen, and an agitator projecting into said cup, said agitator provided with a member adapted to receive thereon the fall of the coarse refuse from the screen.

4. An amalgamator comprising a frame having an inclined screen mounted thereon, an amalgamating cup mounted beneath said screen, an agitator projecting into said cup, and a movably supported member connected to said agitator, said member being directly beneath the lower edge of said screen.

In witness that I claim the foregoing I have hereunto subscribed my name this 27th day of September, 1907.

BENJAMIN F. GEIGER.

Witnesses:

TRIMBLE BARKELEW,
OLLIE PALMER.