

No. 898,119.

PATENTED SEPT. 8, 1908.

W. R. LINS.

ORE SEPARATING OR CONCENTRATING MACHINE.

APPLICATION FILED MAY 13, 1907.

2 SHEETS—SHEET 1.

Fig. 1

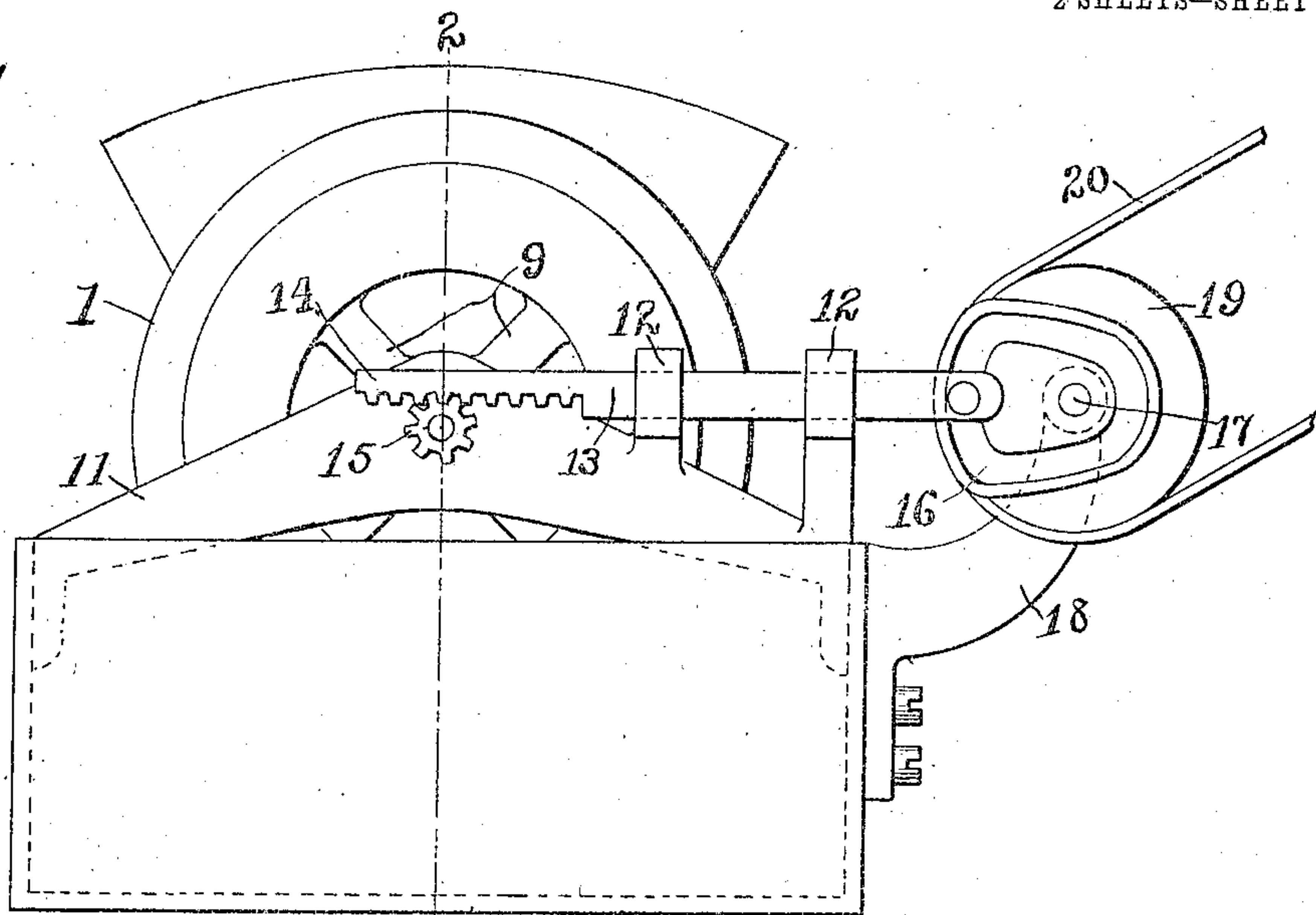
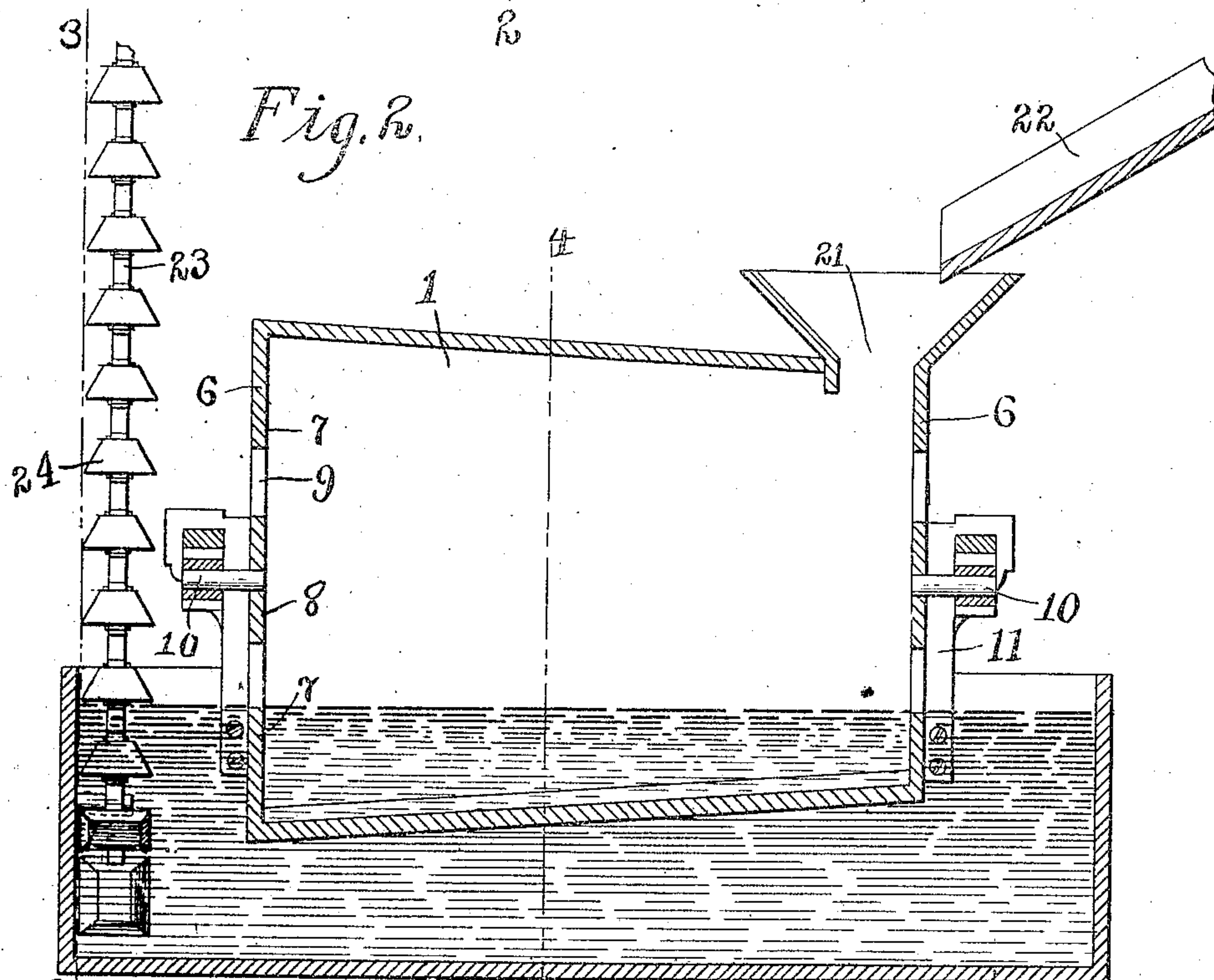


Fig. 2



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Fig. 3.

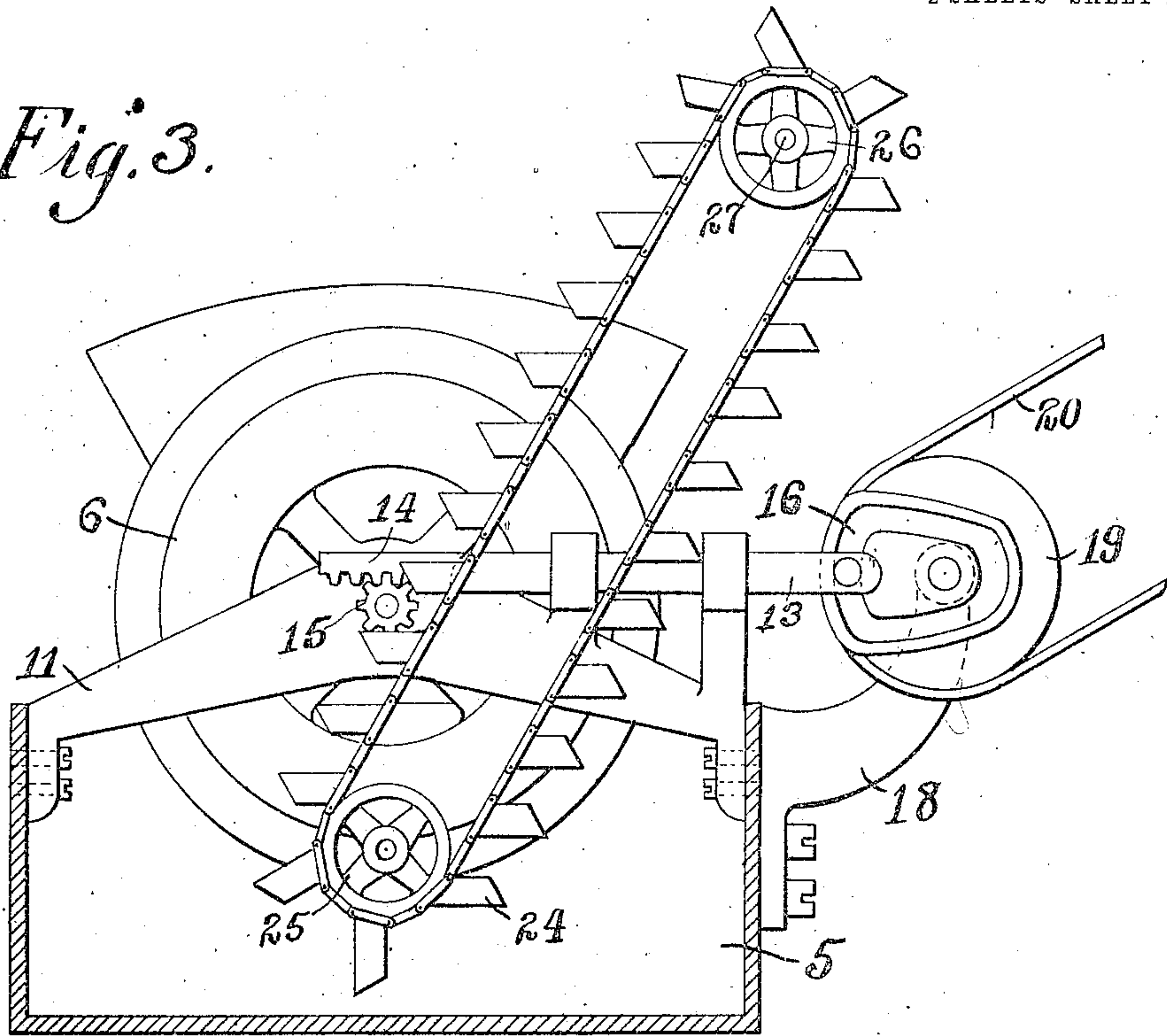
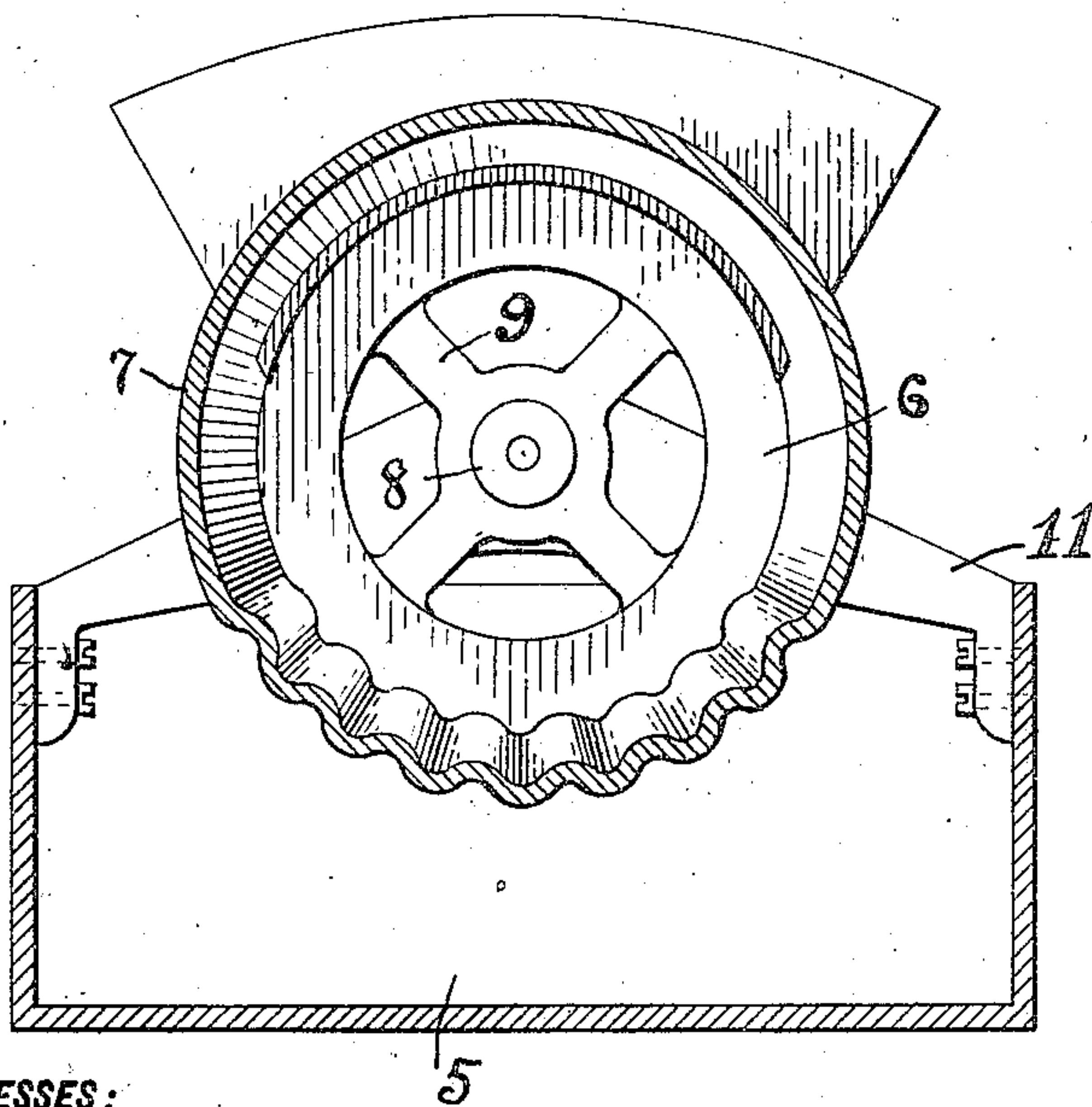


Fig. 4



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WALTER R. LINS, OF PHILADELPHIA, PENNSYLVANIA.

ORE SEPARATING OR CONCENTRATING MACHINE.

No. 898,119.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed May 13, 1907. Serial No. 373,211.

To all whom it may concern:

Be it known that I, WALTER R. LINS, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ore Separating or Concentrating Machines, of which the following is a specification.

This invention relates to ore separating or concentrating machines; the object being to provide a simple and efficient machine whereby the concentrates may be separated from the ore as the latter is passed through the machine.

The invention consists in the novel construction and combinations of parts hereinafter fully described and particularly claimed.

In the drawings:—Figure 1 is an end elevation of my improved machine. Fig. 2 is a longitudinal sectional view thereof as on the line 2—2, of Fig. 1. Fig. 3 is a transverse sectional view as on the line 3—3, of Fig. 2. Fig. 4 is a transverse sectional view as on the line 4—4, of Fig. 2.

5 designates a suitable tank within which is arranged a tapering drum, 1, the lower portion of which is corrugated longitudinally of the drum. This drum is provided with end heads 6. The end heads comprise circular flanges 7 and hubs 8 connected to the flanges 7 by arms 9; the flanges providing means whereby a water level may be maintained within the drum and the spaces between the arms 9, providing openings through which water, &c., may flow from within the drum. Projecting from the hubs of the end heads 6 are stud shafts 10 which project into bearings in frames or brackets 11 extending across the tank 5 and secured to the side walls thereof. Rising from the brackets 11 are bearings 12 to which are fitted transversely-arranged reciprocative bars 13 on the inner ends of which are formed gear racks 14 in engagement with gear wheels 15 secured to the stud shafts 10. The outer ends of the bars 13 carry rollers extending into grooves of cams 16 secured to a shaft 17 which is mounted in bearings 18 secured to one side of the tank 5, the shaft 17 being provided with a pulley 19 around which passes a belt 20 leading from any suitable source of power to rotate the shaft 17. The contour of the cams 16 is such that during the rotation of the shaft 17 the bars 13 will be drawn toward the shaft 17, maintained adjacent the shaft a short space of time, and then pro-

jected from the shaft and maintained in the projected position a short space of time; thus reciprocating the bars 13 in a manner to cause the racks 14 to rock the drum 1 first to one side and then to the other side, and to bring the drum to rest a short space of time at the end of each stroke of the bars 13 for a purpose hereinafter explained.

The upper portion of the smaller end of the drum 1 is provided with an opening 21 having a flaring mouth; and arranged directly above the mouth of the opening is the lower end of an inclined chute 22 through which the ore is fed to the machine.

Arranged adjacent the larger end of the drum 1 is an endless chain conveyer 23 provided with suitable buckets 24 to carry off waste matter from the machine. The lower end of the conveyer chain 23, passes around a suitable wheel 25 which is mounted on a stud shaft within the tank, and the upper end of the conveyer chain passes around a similar wheel 26 mounted on a shaft 27 to which power may be applied to actuate the conveyer.

The operation of the machine is as follows:—The tank 5 and drum 1 are provided with water and the ore is introduced to the drum through the chute 22 at the small end of the drum, and the ore passes to the larger end of the drum and flows out through the opening therein into the tank 5, from which it is carried by the conveyer 23 to a suitable point of discharge. During the passage of the ore through the drum the shaft 17 is rotated and through its connection with the drum 1 said drum is rocked back and forth. During the back and forth motion of the drum the corrugations in the bottom thereof carry the ore from side to side, and as the drum is brought to rest at each side during the rocking thereof, the ore flows down toward the center and is then rocked to the opposite side of the drum. Thus the ore is caused to flow back and forth transversely of the drum during its longitudinal passage therethrough. This operation thoroughly agitates the ore and causes the concentrates, which are heavier than the waste matter, to settle to the bottom of the drum, while the waste matter of the ore passes out through the openings in the larger end of the drum and is carried off by the conveyer chain. After this operation has been carried on a sufficient length of time the enriched material is collected from the bottom of the drum and the gold or other ore is re-

covered by careful washing or "panning out" in a smaller pan.

I claim:—

1. In a machine of the character described,
5 a tank, a rocking drum mounted in said tank and having an opening discharging into said tank, said drum being conical and formed as an integral structure, the bottom of said drum having corrugations therein extending
10 the length of the drum, and throughout a portion of its circumference, means for feeding the ore to said drum, and means for rocking the drum.

2. In a machine of the character described,
15 a tank, a rocking drum mounted in said tank and having an opening discharging into said tank, said drum being conical and formed as

an integral structure, the bottom of said drum having corrugations therein extending the length of the drum, and throughout a portion of its circumference, brackets carried by said tank for supporting the drum therein, a reciprocatory bar carried by one of said brackets, connections between said bar and said drum, whereby the latter is rocked
20 by said bar, means for reciprocating said bar, and means for feeding the ore to said drum.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER R. LINS.

Witnesses:

SADIE I. HARPER,
A. V. GROUPE.