

(No Model.)

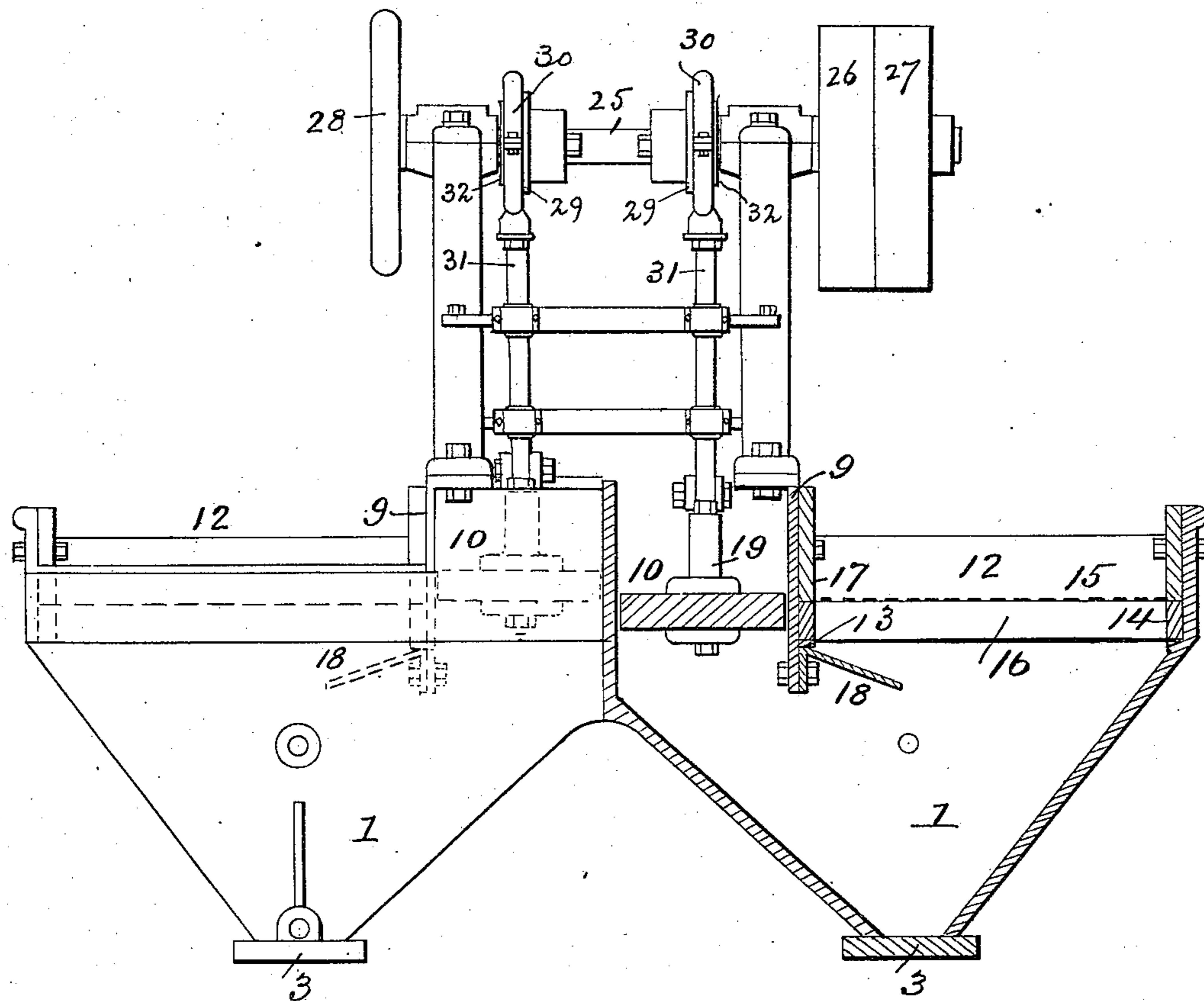
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C. J. HODGE.
JIG FOR MINERAL OR ORE WASHING.

No. 575,646.

Patented Jan. 19, 1897.

Fig. 1.



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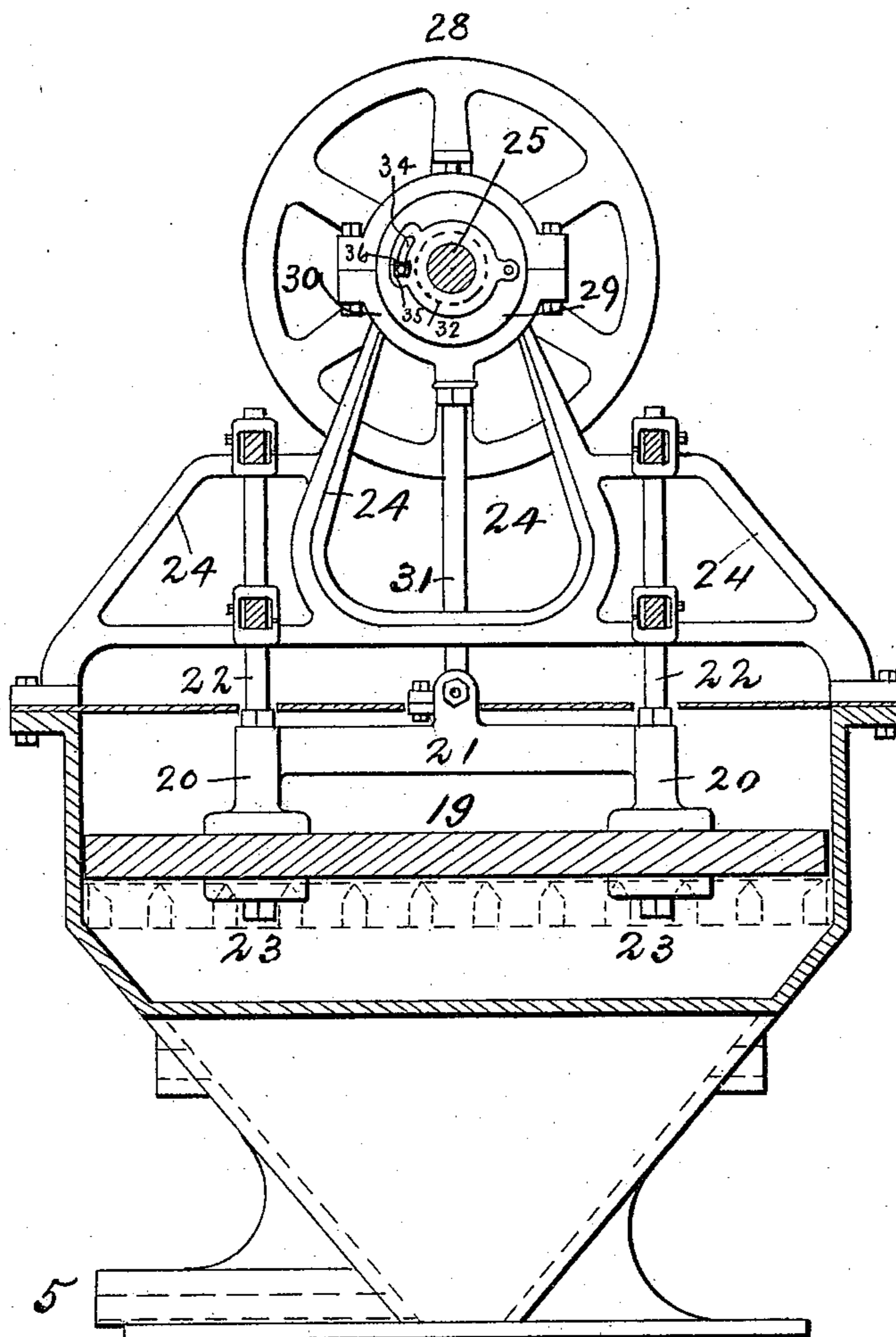
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Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES J. HODGE, OF HOUGHTON, MICHIGAN.

JIG FOR MINERAL OR ORE WASHING.

SPECIFICATION forming part of Letters Patent No. 575,646, dated January 19, 1897.

Application filed June 29, 1896. Serial No. 597,424. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. HODGE, a citizen of the United States, and a resident of Houghton, in the county of Houghton and State of Michigan, have invented certain new and useful Improvements in Jigs for Mineral or Ore Washing; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The invention relates to mineral or ore washing apparatus of that class or description for which I have filed a concurrent application, Serial No. 597,423.

The object of the present invention is to provide an improved construction of the same, by which I obtain superior advantages with respect to efficiency in operation.

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

In the accompanying drawings, Figure 1 is an elevation, partly in longitudinal section, of a mineral-washing apparatus constructed in accordance with my invention. Fig. 2 is a transverse section of the same.

In the said drawings the reference-numeral 1 designates two tanks or hutches cast integral with each other, the sides of which incline or converge downwardly toward a base 3, formed therewith, and which serve as supports for the apparatus. Both of these tanks are identical in construction, and a description of one, therefore, will suffice for both. At the contracted lower end the tank is formed with an opening with which is connected a discharge-pipe 5, whereby the contents of the tank may be drawn off. The upper ends of the walls or sides of the tank are vertical, forming a rectangular space which is divided, by means of transverse partitions 9, into two compartments 10 and 12. This partition extends the entire width of the tank and is provided with a rib or shoulder 13. A corresponding rib or shoulder 14 is formed on the opposite side of the tank, and on these shoulders rests a sieve or screen 15, consisting of a slatted frame 16, upon which this screen

rests. This sieve or screen is held in place by transverse wooden strips or cleats 17, bolted to the tank and partition, with the lower edges resting on the sieve. To the rib or shoulder of the partition is bolted an inclined deflecting-plate 18.

Located in each of the compartments 10 is a vertically-reciprocating plunger 19, consisting of rectangular wooden boards, with which is connected a cross-head consisting of the vertical sockets 20, connected together by a cross-bar 21. Passing through these sockets and the plunger are two vertical guide-rods 22, held thereto by means of nuts 23. These rods pass up through stationary cross-heads secured to brackets 24, which are bolted to the tanks. Journaled in bearings carried by said brackets is a driving-shaft 25, provided with fast and loose pulleys 26 and 27 at one end and a fly-wheel 28 at the other end. Secured to said shaft are eccentrics 29, provided with eccentric straps or bands 30, which are connected by pitmen 31, with the cross-heads secured to the plungers. The shaft passes loosely through the eccentrics, (see dotted line, Fig. 2,) so that the eccentrics may be adjusted to vary the throw of the pitmen. Secured to said shaft is a plate 32, (one for each eccentric,) one end of which is pivotally connected with the eccentric, while the other end is formed with a segmental slot 34, through which passes a screw pin or stud 35, fast to the eccentric and provided with a nut 36. By loosening this nut the eccentrics may be adjusted to vary the stroke of the pitmen.

The operation is as follows: The tanks are filled with water, submerging the sieves or screens and the plungers, and a bed of heavy mineral, generally from two to three inches thick, is placed on the sieves or screens to prevent any sand or waste material escaping down into the tanks. The material to be treated is fed with water to the upper ends of the tanks and the plungers set in motion, which will agitate the material on the sieves, separating the mineral from the sand and earth, which will flow off with the water at the upper sides of the tanks, while the fine washed mineral will fall to the bottom of the tanks, from which it may be drawn off by the discharge-pipe.

By the above construction the stroke or travel of the plungers may be regulated according to the grade of the material to be treated, and as the plungers and the eccen-
5 trics by which they are driven are separate and independent of each other different grades of material may be treated in the tanks at the same time.

The object of the deflecting-plates is to de-
10 flect the water toward the outer sides of the tanks, so as to produce a more uniform motion of the material on the sieves, as the tendency of the plungers is to produce a more violent agitation of the water on the sides of the sieves
15 nearest the plungers.

Having thus fully described my invention, what I claim is--

1. In a mineral-washing apparatus of the character described, the combination with the
20 alternately-operating plungers, the reciprocating cross-heads provided with vertical sockets, the guide-rods passing through said sockets and plungers, the securing-nuts, the stationary cross-heads through which said
25 rods pass and the pitmen connected with said reciprocating cross-heads; substantially as described.

2. In a mineral-washing apparatus of the character described, the combination with the
30 alternately-operating plungers, the vertically-reciprocating cross-heads connected therewith provided with sockets at each end, the

vertical guide-rods passing through said sockets and plungers, the securing-nuts, the stationary cross-heads through which said
35 rods pass, the pitmen connected with said reciprocating cross-heads, the eccentric straps or bands and the adjustable eccentrics; substantially as described.

3. In a mineral-washing apparatus, the
40 combination with the tanks, having converging lower ends and vertical upper ends, the transverse partitions dividing the upper part of each of said tanks into two compartments and formed with shoulders at the lower ends,
45 the sieves located in the outer compartments and supported by said shoulders and the outwardly-extending inclined deflecting-plates at the lower ends of said partitions, of the alternately-operating plungers, the recipro-
50 cating cross-heads provided with vertical sockets, the guide-rods passing through said sockets and plungers, the stationary cross-heads through which said rods pass, and the pitmen connected with said reciprocating
55 cross-heads, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

CHARLES J. HODGE.

Witnesses:

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JOSEPH W. LOVELL.