the pivot is a pin-piece A^6, on which takes the end of connecting-rod B^3 to a crank-pin B^2 whose throw is preferably adjustable in a slot in disc B^1 on main shaft or spindle B in bearings B^4 on the main framing. Brackets or L-pieces A^7 from the framing hold on bolts A^8, indiarubber blocks A^9 forming buffers to impart the percussive motion to the table or dish, when it is reciprocated by the revolution of main shaft B. A conical distributing surface or spreader C is supported by a subsidiary upper framing above the table or dish A and has above its apex a hopper C^1, having preferably within it a grating or seive C^2. Through the centre of the table or dish A a discharge-pipe D protrudes upwardly not quite to the level of the top edge of said table or dish, so that the discharge of said table or dish takes place from that level. This pipe D passes through an annular discharge passage E for the concentrates, and extends downwardly through a receiver for said concentrates to a launder or trough D^1 to waste. Suspended above the contents level of the table or dish A, and hanging below that level, is a ring F of blanketing or other woollen or fibrous material, which is sewn on to ring or hoop F^1 through holes therein, said ring or hoop being soldered or otherwise fixed on the underside of distributor or spreader C. A machine constructed as described and explained would work effectually though the concentrates gathered on the table or dish A around pipe D would have to be withdrawn by an attendant at intervals as required through a door or closing-piece to passage E. But it is preferable that the discharge of concentrates should be automatic, and this is brought about by the mechanism now to be described. The passage E terminates in a valve seating E', against which takes valve-piece E^2 fixed on pipe D. This pipe D carries basin or director E^x above the receiver or receptacle E^y, having inclined bottom E^z. The pipe D and valve E^2 are intermittently raised and lowered by lever E^3 on fulcrum-pin E^5 on bracket E^6, which lever has back-spring E^7 under compression, so that the tendency is for said lever to keep valve E^2 to its seat E^1 and passage E closed. The back end of lever E^3 is connected by link E^9, having ball-and-socket joint E^8 thereto to bell-crank E^{11}, by other ball-and-socket joint E^{10}, and this bell-crank has U-connections E^{12} to rod E^{13}, from crank-pin in slotted disc E^{14} on secondary shaft or spindle E^{15} on bearings E^{16}, and driven by belt around pulleys E^{17} and $B,^5$ so that it will revolve considerably slower than main shaft B. The rod E^{13} may be lifted from its U-connection E^{12} with bell-crank E^{11} by hand-lever E^{20} on spindle E^{19}, actuating lever E^{18}, so that the motion of lever E^3 will cease and the intermittent opening of passage E be prevented. The shaft B may be driven by any suitable means, although as preferable cone-pulleys B^6 are shown to be driven from a counter-shaft. The main framing consists of sole longitudinal beams G^1, sole cross-beams G^2, uprights G, top longitudinals G^3, top cross-beams G^4, and subsidiary piece G^5, and the upper framing consists of uprights G^6, cross-pieces G^7, and bearers G^8.

In operation the material to be treated is fed with water into hopper C, and falling through a grating or sieve C^1, is distributed or spread by passing down the cone-surface C dropping upon the outer part of the table or dish A. This table or dish fills with the water and material to the top of pipe D, when the discharge of the gangue or waste commences, and then any floating gold or surface mineral has to pass the trailing edge of the blanket-ring F before discharge is reached, and by the nature of the blanketing or woollen or fibrous material such valuable particles are detained, and caused to settle upon the table or dish A, whence they will pass to the concentrates discharge. The heavier particles or concentrates pass down the inclined plane of the table or dish A, and would gather around pipe D but for the automatic discharge which, as hereinbefore explained, is the regular but intermittent opening of the valve E^2 on seating E^1 at bottom of discharge-passage E. The gangue or waste passing down pipe D flows through the launder D^1 to where required, while the concentrates, falling through passage E^3, are directed by basin E^x into receptacle E^y up the inclined bottom E^z, off which they may be raked or scraped when desired or necessary. In use as an amalgamator and concentrator, the distributor or spreader C is made of amalgamating or "copper" plates; and in use as an amalgamator alone the table or dish A would likewise be made of amalgamating or copper plates.

Having now particularly described and explained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

1. An improved shaking-table concentrating machine, usable also as an amalgamator, consisting of a circular shelving plane or table or inverted conical dish, having shaking or percussive motion, or both, to which table or dish there is an outside or peripheral feed, and from which there is a central discharge for tailings and a central discharge for concentrates, substantially as herein described and explained.

2. In a concentrating machine of the class set forth, the combination and arrangement with a circular shelving plane or table or inverted conical dish having motion, a peripheral feed, and a central discharge of a ring of blanket or other woollen or fibrous material dipping below the normal level of the contents of said table or dish, substantially as herein described or explained.

3. In a concentrating machine of the class set forth the combination and arrangement with a table or dish, such as A, fixed to ring or hoop, such as A^1, having cross-stays, such as A^x, of suspending hooks, such as A^2, pivot, such as A^4, pin-piece, such as A^6, connecting-rod, such as B^3, crank-pin, such as B^2, disc, such as B^1, and shaft or spindle, such as B, substantially as herein described and explained, and as illustrated in the drawing.

4. In a concentrating machine of the class set forth, the combination and arrangement with parts such as those set out in the preceding (third) claiming clause, of indiarubber blocks or buffers, such as A^9, or bolts, such as A^8, on bracket-pieces, such as A^7, substantially as herein described and explained, and as illustrated in the drawing.

5. In a concentrating machine of the class set forth, the combination and arrangement with a table or dish, such as A, having central discharge-pipe, such as D, and discharge opening, such as E, of distributing cone or spreader, such as C, having hopper, such as C^1, and preferably sieve or grating, such as C^2, substantially as herein described and explained, and as illustrated in the drawing.