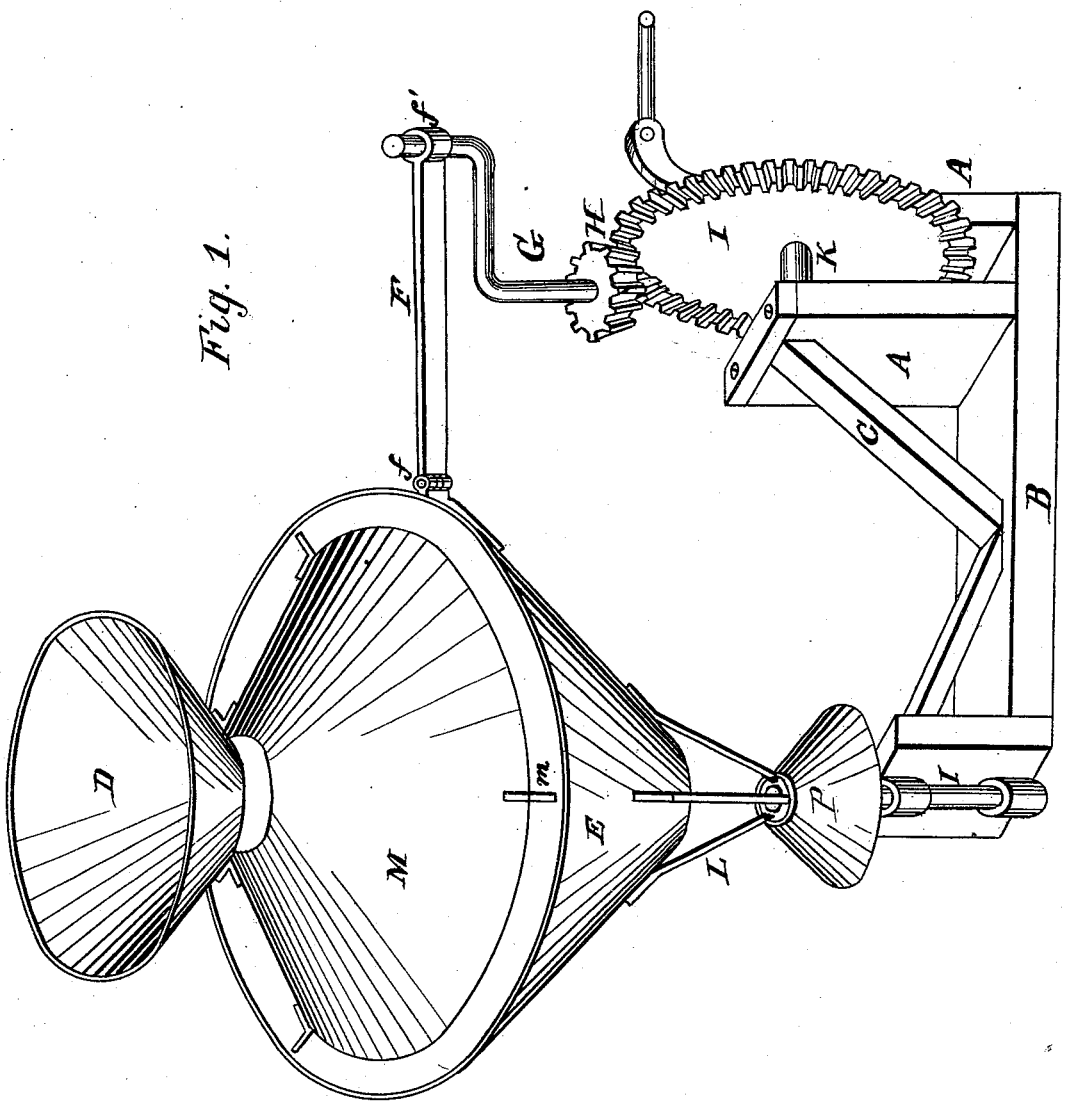
2 Sheets—Sheet 1.

P. PLANT.
Ore-Separator.

No. 209,074. Patented Oct. 15, 1878.

Fig. 1.



Witnesses
John A. Taubenschmidt
J. N. Mitchelmore

Inventor
Paschal Plant

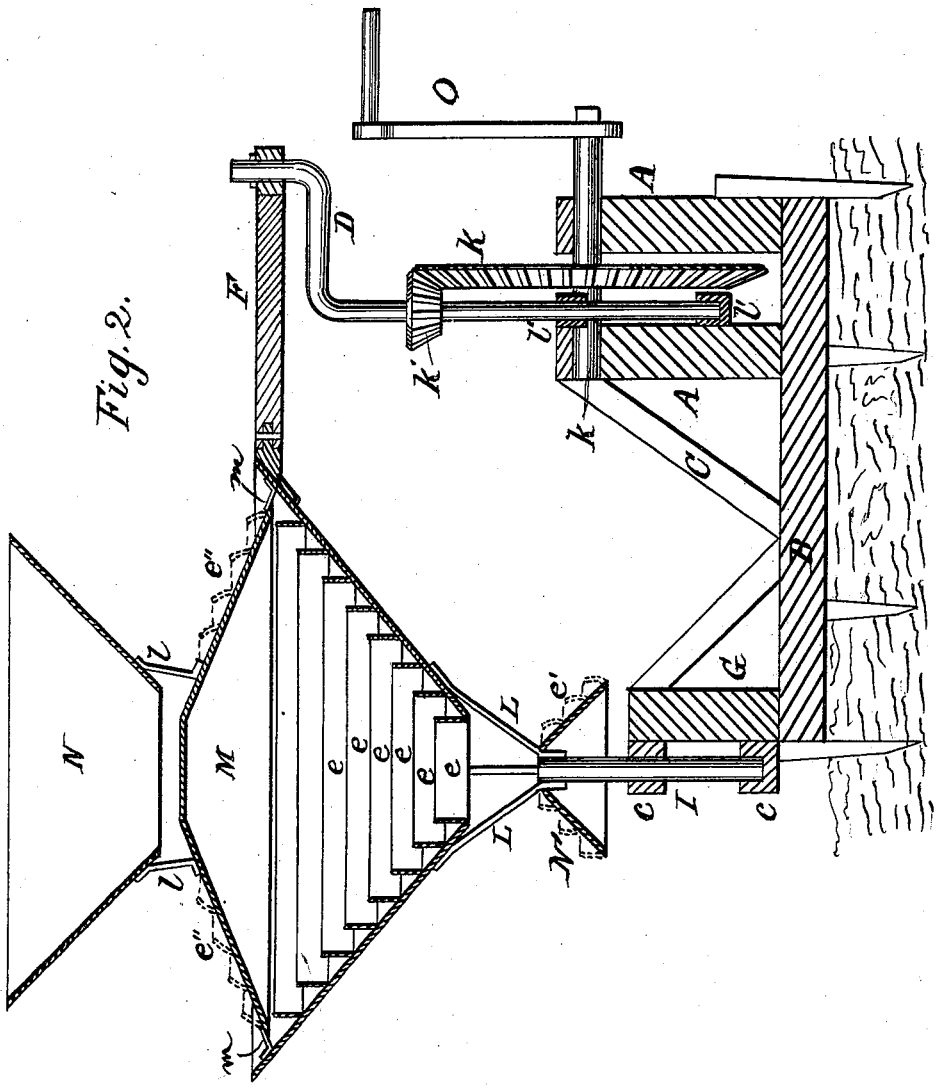
2 Sheets—Sheet 2.

P. PLANT.

Ore-Separator.

No. 209,074. Patented Oct. 15, 1878.

Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

PASCHAL PLANT, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ORE-SEPARATORS.

Specification forming part of Letters Patent No. **209,074**, dated October 15, 1878; application filed September 6, 1878.

To all whom it may concern:

Be it known that I, PASCHAL PLANT, of Washington, in the county of Washington, District of Columbia, have invented certain new a d useful Improvements in Gold-Separators; and I do hereby declare that the following is a full, clear, and exact description thereof, 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, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a section.

My invention relates to that class of dry-placer separators in which agitation alone is employed to cause the separation of the heavy material from the earthy matter containing it. The trouble experienced with all of the devices of this class of which I have any knowledge seems to be that, although separation to a greater or less extent may take place upon continued operation, the gold becomes again remixed with the earthy matter, and with it carried away and lost.

The object of my present invention, therefore, is to produce a machine which will cause perfect separation of the gold from the sand, and which may be operated any length of time without the gold remixing with the sand, thus saving all of the precious metal; and my invention consists mainly in a series of uninterrupted annular tables or troughs, located one above the other, so that upon continuous feeding the material will pass by gravity from the edge of the one above to the one next below, the whole being supported upon a central shaft, and to which is imparted by suitable mechanism a circular reciprocating motion.

In the accompanying drawings, A A′ represent two uprights, supported upon the bed-piece B and stayed by the brace C. These uprights support the cogged drive-wheel K by the shaft *k*. Upon the uprights A are secured a step, *l*, and a journal, *l′*, which supports the crank-shaft D, which is revolved by the beveled pinion K′, located thereon, meshing into the drive-wheel K. By means of this mechanism and the jointed connecting-rod F a reciprocating motion may be imparted to the separator.

The separator consists of an inverted cone or funnel shaped receptacle, E, open at the bottom, and secured to the short upright shaft I by braces L L. This shaft turns in the step and journal C C, secured to the upright G. Within the funnel-shaped receptacle E are secured the annular rings or strips of metal *e*, which, together with the sides of the receptacle, form continuous **V**-shaped troughs or grooves, extending entirely around the inside of the receptacle. The cone-shaped distributer M is supported by the projections *m*, secured to the edge of the distributer within the top of the receptacle E, so as to leave an annular space between it and the edge of the distributer. At the apex of this cone-shaped distributer is the hopper N, secured by the legs *l*.

The operation of the machines is as follows: The material, previously relieved of rocks, &c., is shoveled or otherwise placed in the hopper. Motion being imparted to the machine by hand or other power applied to the crank O, the material passes to the distributer, and, spreading over it in a thin sheet, drops over the edge all around its periphery into the first of upper channels or grooves. This channel or groove becoming full, the material drops over the edge into the groove below, and so on in succession until it falls out at the bottom. The heavy portion, gold, &c., being separated from the light by the agitator, in consequence of its greater specific gravity, remains in the bottom of the trough, from whence it may be collected when desired. In this manner, the motion being circular and the grooves annular, and free entirely from any obstructions, the material is left to the effect of the circular motion alone, thus preventing all possibility of "banking" up, and consequently all remixing of the heavy with the light material.

To prevent the sand injuring the journal as it passes out the bottom of the separator, the hood N′ is attached, as shown in Figs. 1 and 2. Upon the outside of this hood may be secured rings or projections E′, thus forming pockets, to still further subject the material to agitation, and collect any precious metal which may escape the pockets above in the separator proper. The outside of the distributer may also be provided with pockets, as shown at *e″*, Fig. 2.

I am aware that flat-bottomed pans, having

annular channels formed upon the upper surface thereof, and which have a circular reciprocating motion imparted to them, have been invented. I am also aware that concave pans, to which a circular and up-and-down motion is imparted, have been invented, but these I do not claim; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The funnel-shaped separator E, open at its bottom and provided with the annular strips *e e*, forming annular channels or grooves upon its inner surface, in combination with mechanism for imparting to it a circular reciprocating motion, substantially as described.

2. The distributer M, supporting the hopper N, and provided with the annular strips *e''*, in combination with the receptacle E and the hood N', provided with the strips *e'*, substantially as described.

PASCHAL PLANT.

Witnesses:
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