

C. D. HICKS.
Ore Separator.

No. 42,372.

Patented April 19, 1864

Fig. 1.

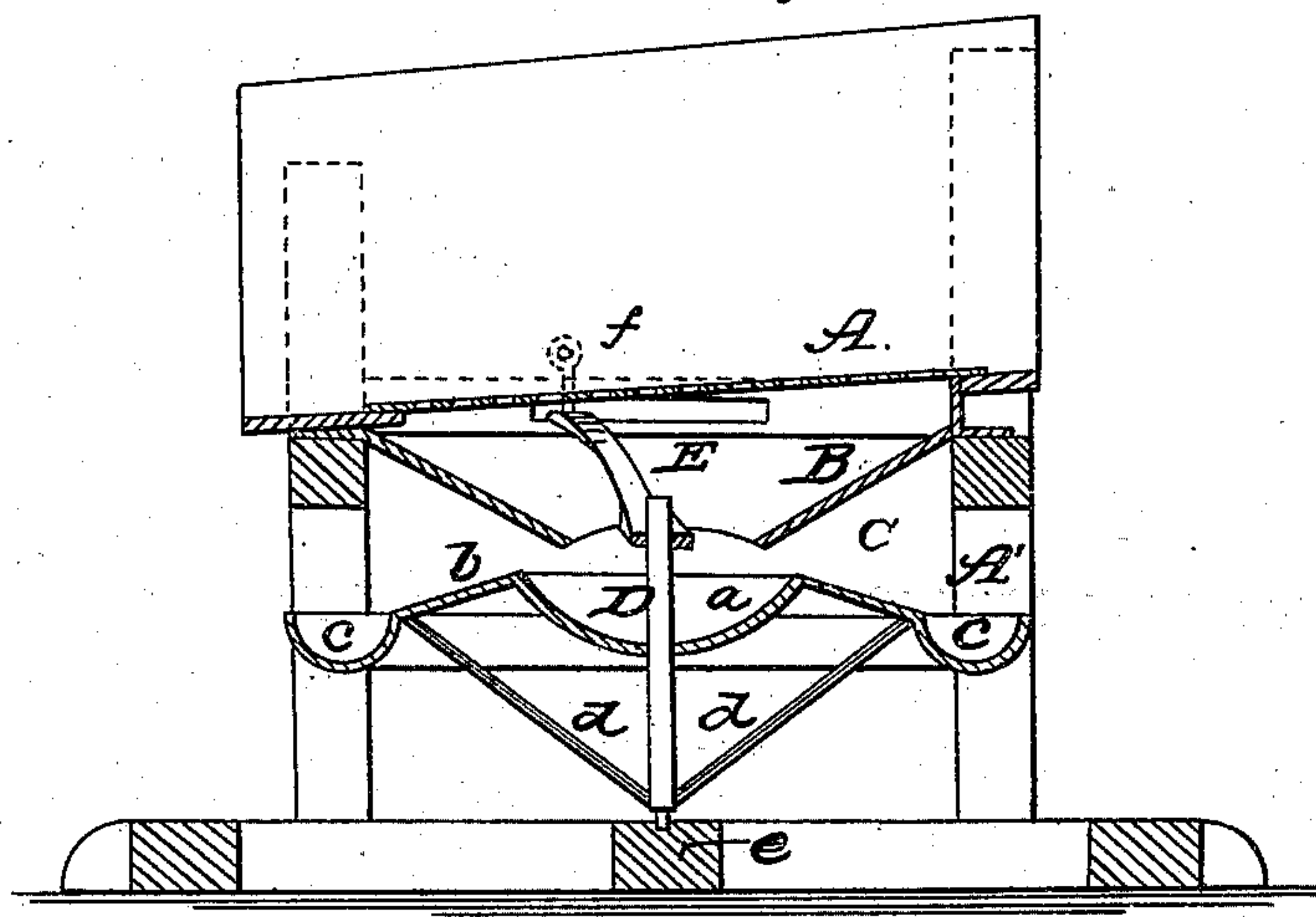
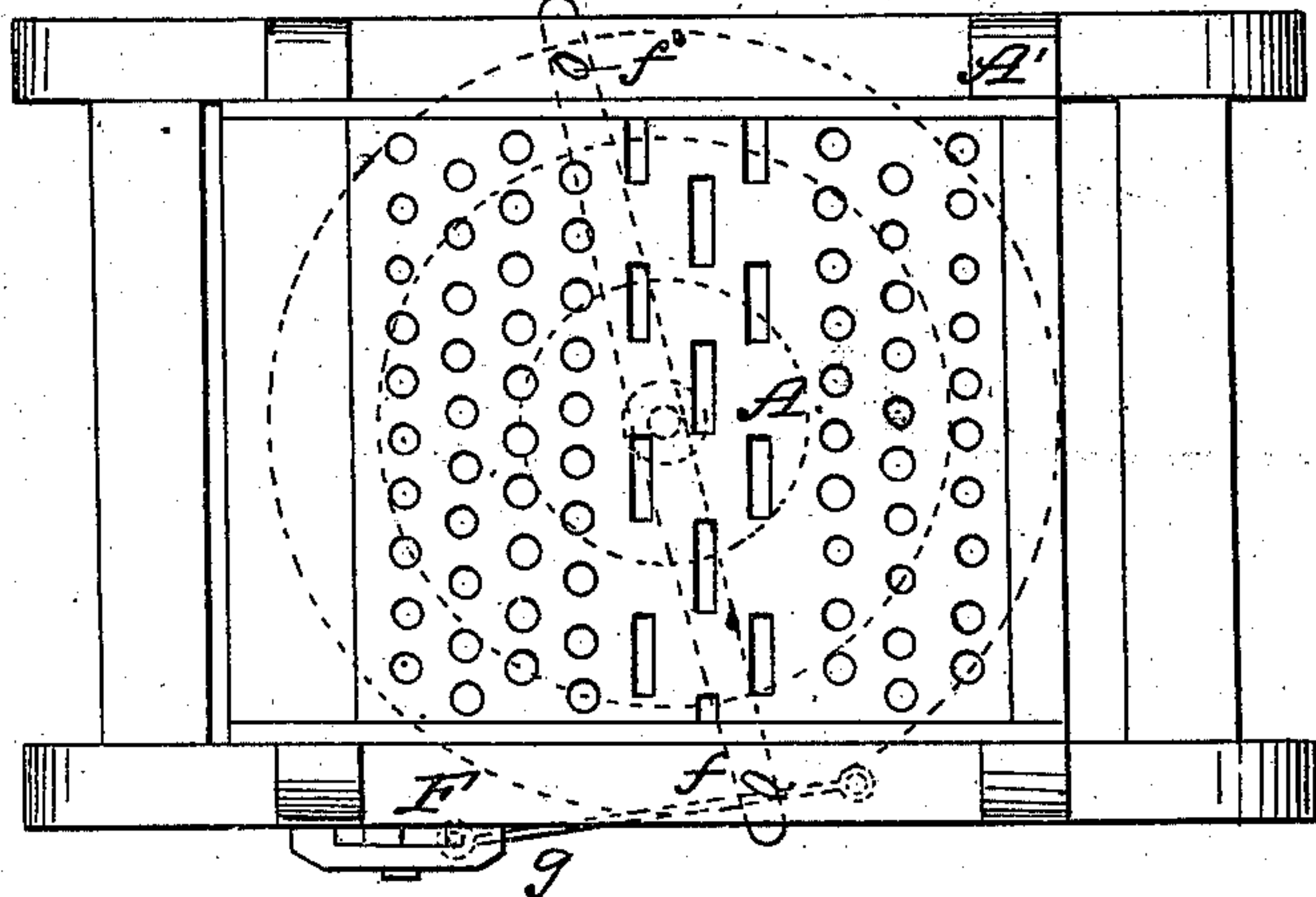


Fig. 2



Witnesses
Henry Munn
J. Woombs.

Inventor
Charles D. Hicks
per Munn & Co
Atto

UNITED STATES PATENT OFFICE.

CHARLES D. HICKS, OF DENVER, COLORADO TERRITORY.

IMPROVED ORE-SEPARATOR.

Specification forming part of Letters Patent No. 42,372, dated April 19, 1864.

To all whom it may concern:

Be it known that I, CHARLES D. HICKS, of Denver, in the county of Arapahoe and Territory of Colorado, have invented a new and Improved Ore-Separator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal vertical section of my invention. Fig. 2 is a plan or top view of the same.

Similar letters of reference in both views indicate corresponding parts.

This invention consists in the employment of an oscillating separator, provided with a hemispherical central cavity, sloped sides, and an annular semicircular trough, in combination with an adjustable shaft, pyramidal chute, and common sluice, in such a manner that the small particles of quartz and gold passing through the perforated bottom of the sluice are conducted to the central cavity of the separator, and by the oscillating motion imparted to said separator and by the action of its sloped sides, the gold contained in the quartz settles down to the bottom of the central cavity and annular trough, and the light particles are carried off by the water.

To enable those skilled in the art to make and use my invention, I will proceed to describe it.

A represents a section of a common sluice set upon a suitable frame-work, A', and provided with a perforated bottom through which the water and small particles of quartz with the gold pass, while the coarse stones run down the sluice.

The matter passing through the perforated bottom of the sluice is conducted by the pyramidal chute B to the center of the separator-wheel C. The chute is made of sheet metal, or any other suitable material, and it is secured to the frame-work A' under the bottom of the sluice, as clearly shown in Fig. 1 of the drawings.

The separator-wheel is made of sheet metal or other suitable material, and of any convenient size. Its center is depressed, forming a hemispherical cavity, *a*, and sloped sides *b*, and from said cavity to the annular semicircular trough *c* said separator is secured to a

vertical arbor, D, and it is steadied by means of braces *d*, or in any other convenient manner.

The arbor D is stepped into a suitable socket, *e*, at the bottom of the frame-work A', and its upper bearing is in a bar, E, which is secured to the frame A' by means of pins *f* in such a manner that its position can be easily changed, and that it can be readily adjusted to bring the arbor in a vertical position. By these means the separator wheel can always be brought in a horizontal position independent of the formation of the ground on which the machine is placed.

A hand-lever, F, which connects by means of a rod, *g*, with a loop secured to the periphery of the separator-wheel, serves to impart to the same an oscillating motion, or instead of the hand lever any other suitable mechanism may be applied to produce the desired motion.

By the oscillating motion imparted to the separator-wheel the particles of quartz and gold passing down from the sluice arrange themselves in the central cavity and in the trough according to their specific gravity, the gold settling down to the bottom and the light particles being swept off by the current of water.

The separation is facilitated by the sloped sides of the separator-wheel, which spread the particles of quartz in thin layers and cause them to roll down slowly into the trough, so that the heavy particles have time to settle down in the annular trough.

By these means ore of any desired description can be readily separated according to the specific gravity of its component parts.

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

The separator-wheel C, provided with a central cavity, *a*, sloped sides *b*, and an annular trough, *c*, and secured to an oscillating adjustable arbor, D, in combination with the pyramidal chute B and sluice A, all constructed and operating in the manner and for the purpose substantially as shown and described.

C. D. HICKS.

Witnesses:

O. E. EDSON,
H. WITTER.