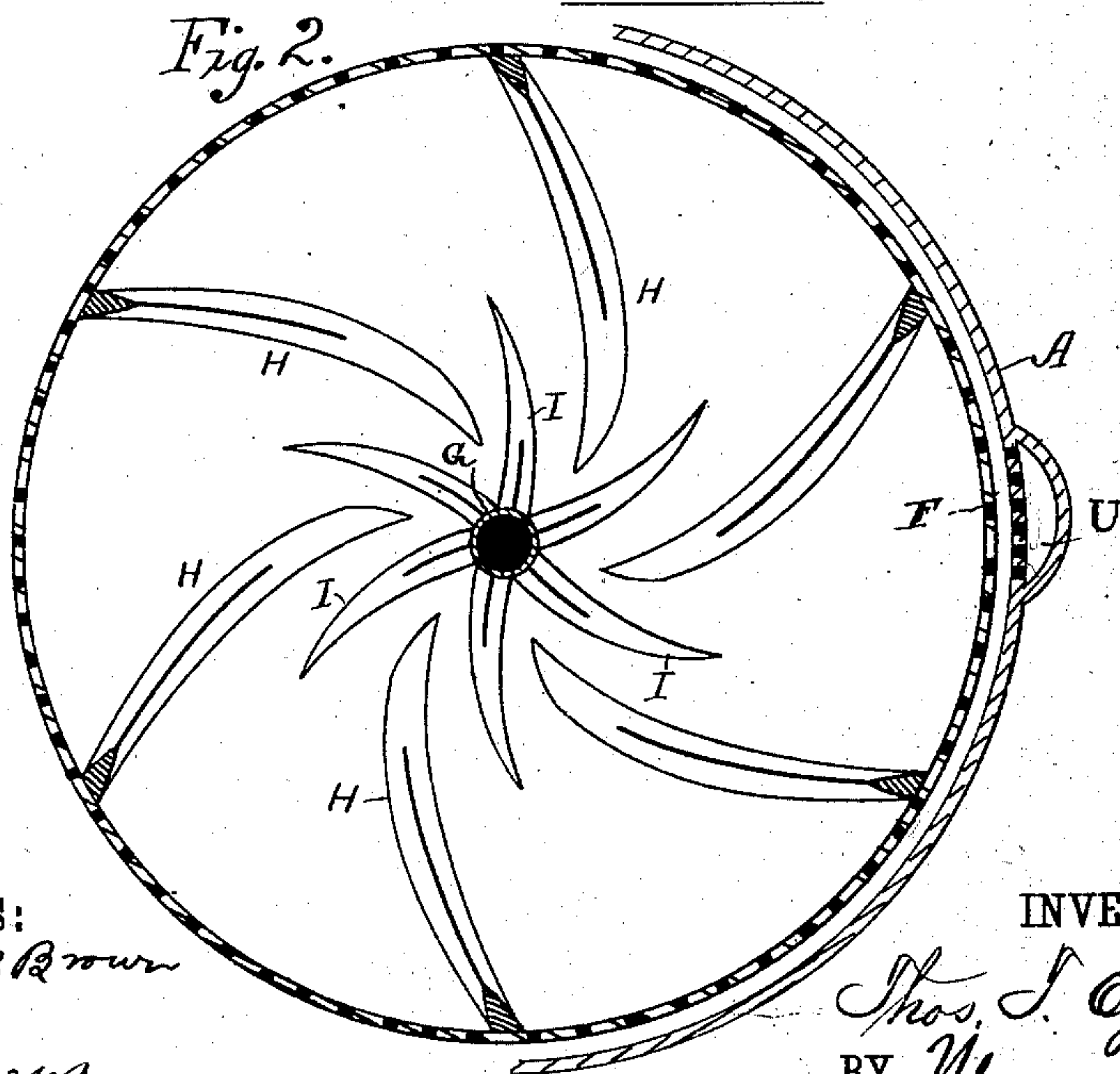
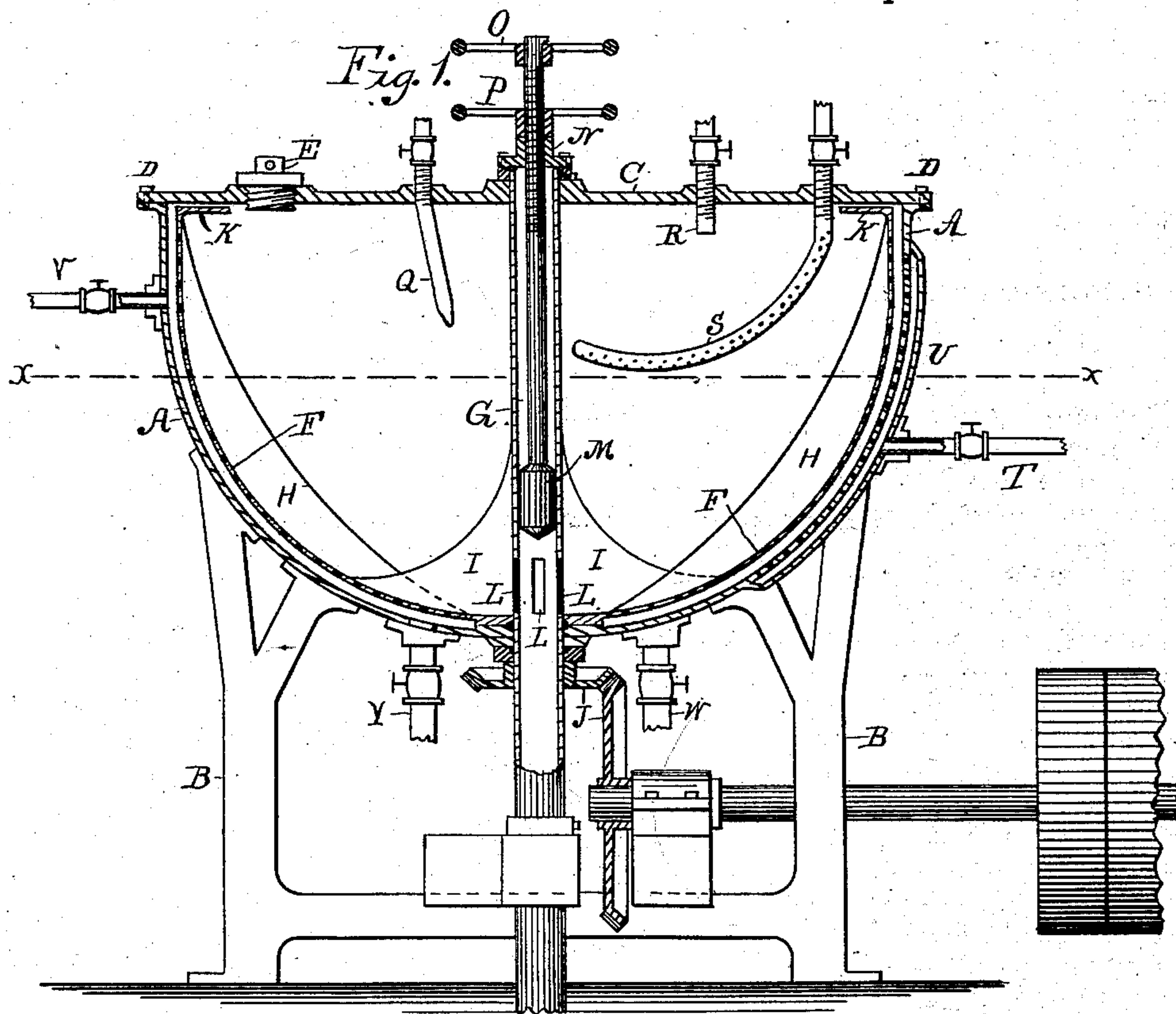


(No Model.)

T. T. EYRE.
CENTRIFUGAL ORE FILTER.

No. 315,398.

Patented Apr. 7, 1885.



WITNESSES:

Harrison R Brown
W. H. Stevens.

INVENTOR:

Thos. T. Eyre
BY *Munroe & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS T. EYRE, OF CARLISLE, TERRITORY OF NEW MEXICO.

CENTRIFUGAL ORE-FILTER.

SPECIFICATION forming part of Letters Patent No. 315,398, dated April 7, 1885.

Application filed November 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS T. EYRE, a citizen of Carlisle, Grant county, New Mexico, have invented certain new and useful Improvements in Centrifugal Ore-Filters, of which the following is a description.

This invention relates to that class of machines used for mechanically filtering the valuable from the refuse portions of ore which has been previously pulverized; and it has for its object to maintain a centrifugal action in the semi-fluid ore until the valuable properties have been withdrawn, to introduce water, gaseous and other fluids as may be required, and to discharge the valuable properties and the refuse matter from different outlets; to which end my invention consists in the construction and combination of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section, part in elevation, of my centrifugal ore-filter; and Fig. 2 is a horizontal section at *x x*, Fig. 1.

A represents an outer shell or kettle mounted on a fixed frame, B, and provided with a cover, C, which is removably fastened onto the kettle by screw-bolts D or otherwise.

E is a screw plug or cap closing tightly the hole at which the pulverized ore is admitted to the kettle.

F is a basket or screen made of perforated metal and mounted on the hollow vertical shaft G, to revolve therewith. The shaft is revolved by any usual means, such as the beveled gear-wheels J.

H represents a series of ribs on the inner face of the screen to stiffen it under the load which it has to carry. These ribs are curved and placed somewhat tangential to the central shaft or spiral, to assist the centrifugal action of the revolving screen to force the semi-fluid ore against the sides of the screen.

I represents a series of bracing-arms secured at their inner ends to the shaft G, and at their bottoms to the screen F. These arms brace and stiffen the attachment of the screen to the shaft, and they are spirally curved, like the ribs H, to assist the centrifugal action.

The upper edge of the screen F is provided with an inward flange, K, to prevent the ore from slopping over.

The hollow shaft G is provided with ports L, which serve as the exit of the refuse matter.

M is a valve fitted to cover the ports L more or less as it is lowered or raised by being screwed down or up through the screw-threaded cap N.

O is the hand-wheel of the valve, and P is a hand-wheel check-nut, used to bind the valve-screw from turning.

Q is a water-pipe pointing toward the ports L, and adapted to direct a stream of water under pressure onto the refuse matter which gradually gathers over the ports in discharging, thereby washing the refuse out through the ports.

R is a pipe for the admission of steam when required.

S is a pipe for the admission of gaseous fluids—such as aqua ammonia, hyposulphite of soda and lime, &c.—hot water or steam being used as a solvent to assist in disintegrating the ores and dissolving the metals. This pipe is closed at its end and perforated along its sides, and it is bent from a vertical position at a little distance from the side of the screen toward the center to lie across the direction of travel of the ore, that it may distribute the gas throughout the mass of ore.

T is a water-pipe entering a distributor, U, which is a passage on the outside of the kettle and connected with the interior thereof by a great many fine holes for the purpose of distributing the water from top to bottom of the kettle to wash the screen while discharging.

V is a similar water-pipe, and it may be similarly connected with the kettle, or it may enter directly into the kettle, as shown.

W and Y are discharge-pipes, which may be connected with different receptacles—the one to hold the richer and the other the poorer metals.

The ribs H and arms I, standing very high, force the ore to revolve with the screen and insure the action of centrifugal force thereon, and the easy upward curve of the screen enables the ore to rise on its sides, thus presenting a great deal of screening-surface.

All the outlet and inlet pipes are provided with stop-cocks by which they may be put in service or be stopped at pleasure.

The pipe W may be used to discharge the

liquid rich in gold, silver, copper, &c., and the poorer liquids may be discharged by the pipe Y. Any number of these pipes may be used to separate the fluids as much as desired.

5 When the screen or basket is reversed, the ribs H and I help the discharge of mud or light refuse by drawing it centrally toward the discharge-ports L. The fine particles of metal mingled with the semi-fluid mass are
10 heavier than the sand or mud particles, and are therefore thrown out through the periphery of the basket by centrifugal force and run down in the kettle to the discharge-valves W and Y. That metal which is the heaviest sinks
15 the lowest, and one of the said valves may be placed lower or nearer center than the other to select and discharge the heaviest ore. The outlets L are within the basket or screen F, and serve to discharge the mud or light refuse.

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

1. The combination, with the kettle A and the screen F, vertically journaled therein, of the cover C, secured thereon with screw or
25 swing bolts, and the screw-plug E, fitted in the lid, as shown and described.

2. The combination, with the kettle A and screen F, vertically journaled therein, and the removable cover C, of the pipe S, passing
30 through the cover at some distance from the edge thereof, bent toward center, closed at the end, and perforated along its sides, as and for the purpose specified.

3. The combination, with the kettle A and the screen F, of the hollow vertical shaft G, 35 supporting the screen, and the valve M, provided with a screw-shank and external hand-wheel, O, and a check-nut, P, the hollow shaft being provided with ports L, substantially as shown and described. 40

4. The combination, with the kettle A, the screen F, and its vertical shaft G, of the ribs H, extending from or near the top of the screen down its sides to near its center of revolution in a spiral direction, as shown and de- 45 scribed.

5. The combination, with the kettle A, the screen F, and its vertical shaft G, of the arms I, secured at their inner ends to the said shaft, secured along their bottoms to the screen, and 50 extending away from the shaft spirally, as and for the purpose specified.

6. The combination, with the kettle A and the screen F, vertically journaled therein, of the passage U, extending from near the top 5; to near the bottom of the kettle and connected therewith throughout its height by perforations in the kettle, and the pipe T, connected with passage U, as shown and described, for the purpose specified.

THOS. T. EYRE.

Witnesses:

B. KAOLISH,

A. M. ROBERTSON.