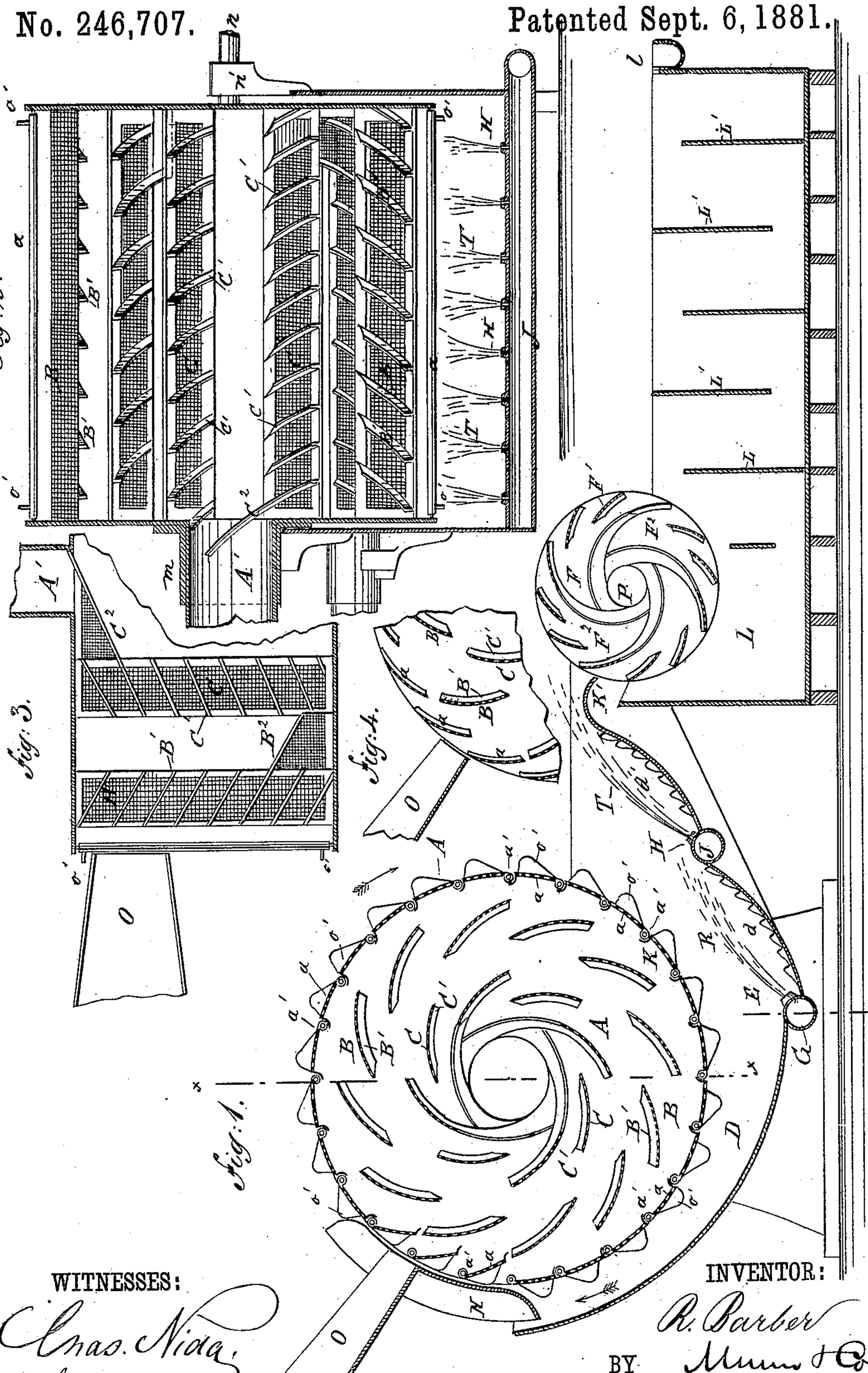
(No Model.)

R. BARBER.

PLACER WORKER AND CONCENTRATOR.

No. 246,707. Patented Sept. 6, 1881.



WITNESSES:

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ROBERT BARBER, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-HALF TO BURCHARD HENRY ADOLPH SIEFKEN, OF SAME PLACE.

PLACER WORKER AND CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 246,707, dated September 6, 1881.

Application filed April 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, ROBERT BARBER, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and useful Improvement in Placer Workers and Concentrators, of which the following is a specification.

Figure 1 is a longitudinal section through my apparatus. Fig. 2 is a vertical section on the line *x x*, Fig. 1; Fig. 3, a view of a portion of the main washer, showing the arrangement of the double series of perforated blades or screens within said washer, the conveying-flights attached to said screens, and the receiving and discharging spouts to and from the same, said blades or screens being shown flat, that their construction may be more easily understood. Fig. 4 shows a modification of the periphery of the main washer.

Similar letters of reference indicate corresponding parts.

My invention relates to that class of apparatus used in placer-mining, whereby the ores or tailings are disintegrated, sifted, and washed preparatory to an amalgamating process.

I more particularly describe my invention as follows:

The feeding-chute O conveys the material into the side of the main washer or disintegrater A, which revolves horizontally in the direction indicated by the arrows. Its outer end is closed, and is supported by the shaft *n* in the journal-bearing *n'*. The discharge-spout A', which opens into the interior of the washer, for purposes hereinafter described, supports it centrally at its opposite end in the bearing *m*. The periphery of said washer A is composed of perforated blades or lids *a*, which are preferably hinged to open inwardly on rods *a'*, secured in both ends of the washer. These lids *a* may open and close by their own gravity, or may be closed by a spring. I prefer to cause a positive opening of said lids by means of the brackets *o'*, which are attached to their outer face and act against the guide N. Through the openings so made the material from the chute O passes into the washer A, the weight of said material causing a closing of the hinged lids *a* at the point K indicated in the drawings. Said lids *a* may be held against undue swinging movement, and made to conform to a circle at the periphery of the washer by means of hooks *b*, or an overlapping of their outer edges upon the adjacent hinge of the lid behind them.

Within the lids *a*, and at a suitable distance therefrom, a series of screens, B, of proper mesh, and provided with spiral conveyers or flights B', are firmly secured to both ends of the washer A, which flights carry the material over the screens B to the end of the washer farthest from the feeding-chute O, and a continuation of said flights, as at B^2, conveys said material into the inner series of screens, C, upon which flights C' are secured in a spiral the reverse of the outer series of flights, B', causing said flights C' to convey the material back to the end of the washer next to the chute O, and a continuation of said flights C', as at C^2, conveys all the coarser material which will not pass through the screens B and C into the central spout, A', from which it is discharged from the machine.

Underneath the revolving washer A is placed the receiving-tank D, into which the siftings from A fall. A series of nozzles, E, connected with a supply-pipe, G, conduct streams of water R, which forcibly impinge upon the siftings falling from the washer A and carry them up to a second series of nozzles, H, connected with the supply-pipe J, which in like manner, by water-jets T, carry the sifted material up to the overflow K, from which it passes into the side of the auxiliary washer F. Said washer F revolves freely in bearings, and is provided with a series of screens, F', flights F^2, and central discharge-tube, P, which are similar in construction and operation to the inner series, C, C', and A', in the interior of the main washer A, except that the mesh of the screens F' is finer than that of the screens C. The siftings from the washer F fall into a tank or series of tanks, L, provided with overflow-pipe *l*. Said tank L is also fitted with partitions L' T, which cause the alternate passage of the water and tailings above and below them, the undulating current insuring a proper settling of the tailings.

Two series of riffles, *d* and *d'*, are employed in combination with the tank D and nozzles E and H, as in Fig. 1.

It is obvious that the chute O, for feeding

the material to the machine, instead of being placed at one end of the washer A, as in Fig. 3, may extend the entire length of said washer, and the material be fed thereto from the full width of the chute or only at one end or side of said wide chute, as circumstances may require.

It is also obvious that instead of hinging the lids *a*, as shown in Fig. 1, the same might be provided with flights and fixed rigidly to the end pieces of the washer in an open position and a small distance apart, as shown in Fig. 4.

The necessary force of water through the discharge-nozzles E and H may be obtained from a natural head, or by the use of pumping-engines of any suitable construction.

My improved apparatus may be operated by steam, water, or other available power.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The washer A, provided with lids *a*, screens or sifters B and C, carrying flights or conveyers B′ and C′, and a central discharging-spout, A′, substantially as and for the purposes herein set forth.

2. The combination, with the hinged lids *a* on washer A, of the brackets O′ and guide N, as and for the purpose specified.

3. The auxiliary washer F, having screen buckets or blades F′, with flights F^2 secured thereon, and a central discharge-spout, P, substantially as and for the purposes set forth.

4. The combination, with the screens B, having spiral flights B′ B^2, and arranged at both ends of washer A, of the screens C, having flights C′ C^2, arranged in a spiral the reverse of that of the flights B′, as and for the purpose described.

5. The combination of nozzles E, connected with supply-pipe G, nozzles H, connected with supply-pipe J, riffles *d d′*, and overflow K, with the tank D and washers A F, as and for the purpose specified.

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Witnesses:
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