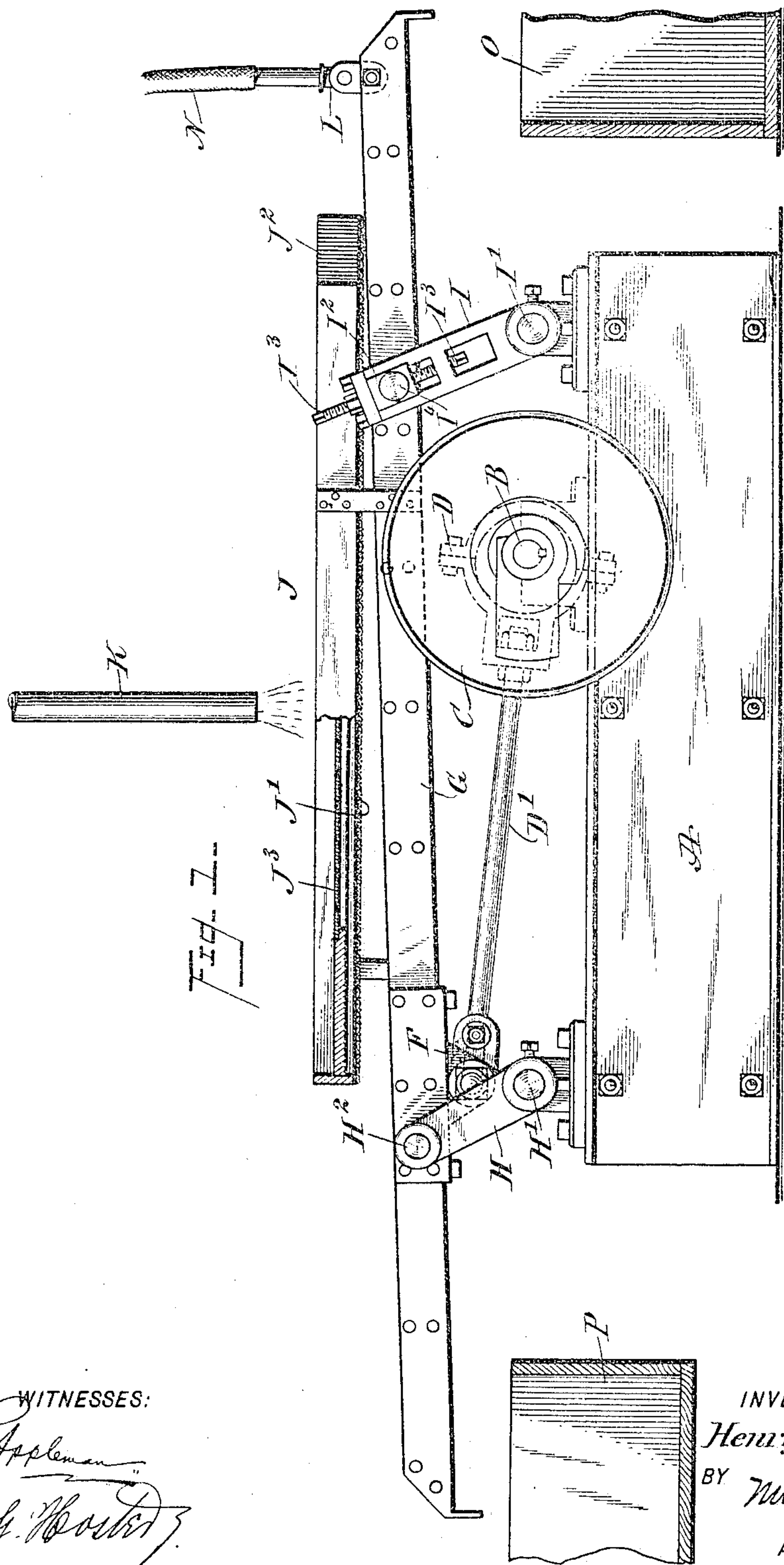


No. 787,190.

PATENTED APR. 11, 1905.

H. C. KRAUSE.
MINERAL VANNER.
APPLICATION FILED OCT. 20, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

WITNESSES:
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INVENTOR

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ATTORNEYS

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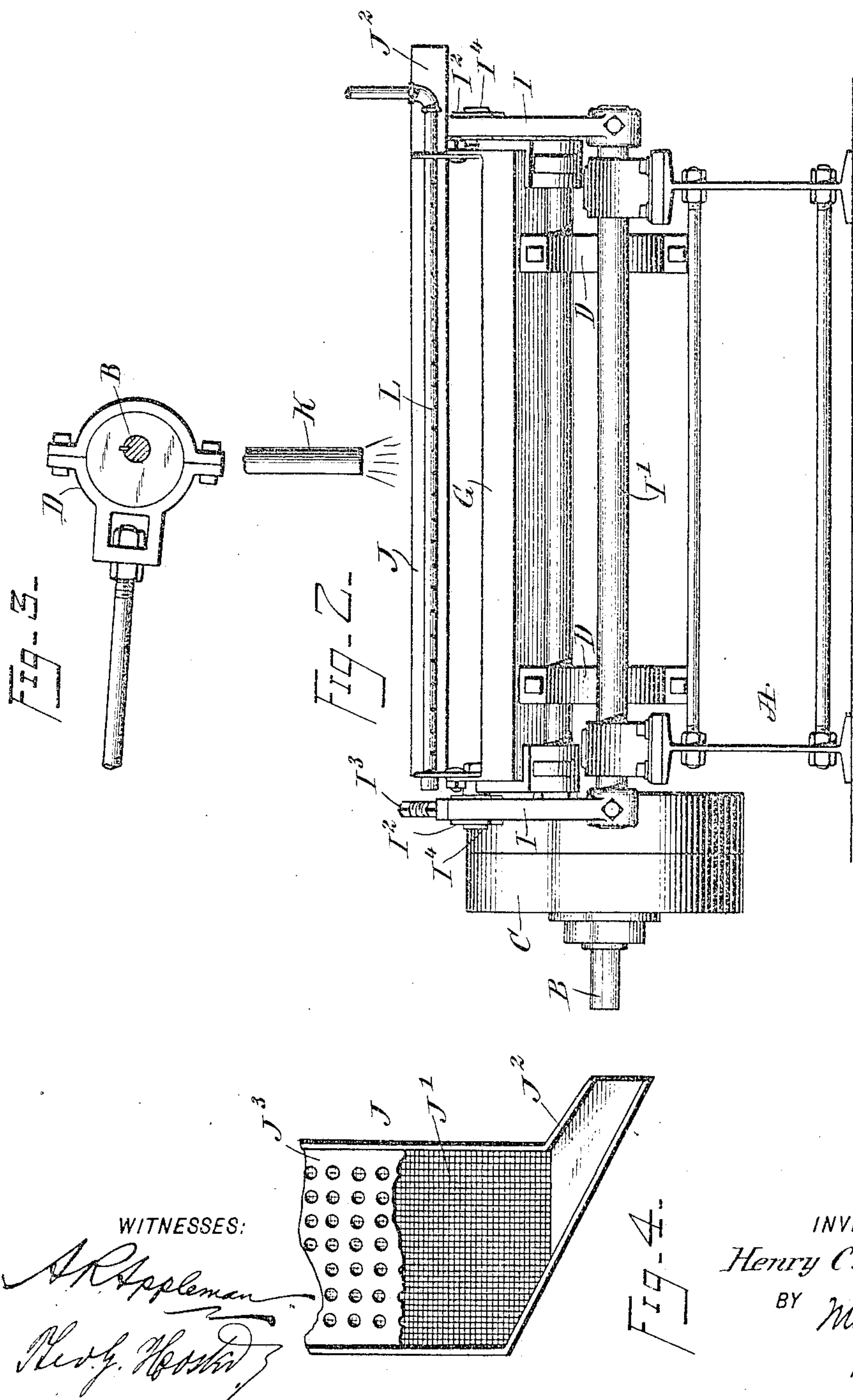


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UNITED STATES PATENT OFFICE.

HENRY C. KRAUSE, OF POINT MILLS, MICHIGAN.

MINERAL-VANNER.

SPECIFICATION forming part of Letters Patent No. 787,190, dated April 11, 1905.

Application filed October 20, 1903. Serial No. 177,777.

To all whom it may concern:

Be it known that I, HENRY C. KRAUSE, a citizen of the United States, and a resident of Point Mills, in the county of Houghton and State of Michigan, have invented a new and Improved Mineral-Vanner, of which the following is a full, clear, and exact description.

The invention relates to concentrators and separators for ores and other minerals; and its object is to provide a new and improved mineral-vanner which is simple and durable in construction, very effective in operation, readily adjustable for treating different minerals, and arranged to insure a quick concentration and separation of the valuable minerals from the tailings.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement, parts being in section. Fig. 2 is an end elevation of the same. Fig. 3 is a side elevation of the eccentric; and Fig. 4 is a plan view of part of the sifter, part of the plate J^3 being broken away.

The improved machine is mounted on a suitably-constructed bed-plate A, on which is journaled the transversely-extending main shaft B, provided with fast and loose pulleys C, connected by belt with other machinery for imparting rotary motion to the said main shaft B. On the latter are secured eccentrics D, preferably two in number and having their eccentric-rods D' connected with brackets F, attached to the under side of a pan G, mounted to swing longitudinally on arms H and I, of which the arms H are secured at their lower ends on a transverse shaft H' , journaled in suitable bearings attached to the top of the base-plate A. The upper end of each arm H is connected with a pivot-pin H^2 , attached to the side of the pan G. The other arms, I, are secured at their lower ends on a transverse shaft I' , journaled

in suitable bearings attached to the bed-plate A, and the upper end of each arm I is provided with a box I^2 , held lengthwise adjustable on the arm I by screws I^3 , and the said box engages a pivot-pin I^4 , attached to the corresponding side of the pan G. By the arrangement described the boxes I^2 of the arms I can be adjusted so as to give more or less inclination to the pan G, according to the nature of the mineral to be treated.

A sifter J extends above the pan G at the middle thereof, and the said sifter is supported from the pan, and into the middle of the sifter discharges a pipe K or other device for delivering the material to be treated to the said sifter. The bottom of the sifter J is provided with a sieve J' —say of twenty mesh—for separating the coarse material from the finer material, the coarse material passing at the head of the sifter J into a transversely-extending chute J^2 for discharging the coarse material to one side of the machine, so that the coarse material does not pass onto the pan G, and consequently the latter is relieved of disposing of the coarse material during the operation.

The material passes from the discharge-pipe K first onto a distributing-plate J^3 , located in the sifter J a distance above the sieve J' , and this distributing-plate J^3 is provided with openings, say about three-eighths of an inch in diameter and spaced one and one-half inches apart. The ends of the distributing-plate J^3 terminate a distance from the ends of the sifter J, so that the material is readily distributed over the entire sieve J' and passes from the latter in a well-distributed condition into the pan to insure a ready concentration and separation of the heavy valuable mineral from the tailings.

It is understood that when the machine is in operation a constant rocking motion is given to the pan G and its sifter J to cause the heavy minerals passing into the pan G to work upward toward the upper discharge end of the pan, while the lighter material—that is, the tailings—works downward on the pan G.

On the upper end of the pan G is arranged a transversely-extending perforated pipe L, connected by a flexible pipe N with a water-

supply, so that the water in small jets passes onto the concentrates in the upper end of the pan G to retard the sand and to wash the heavy mineral over the pan into a receptacle O, placed below the upper end of the said pan. The tailings pass from the lower end of the pan into a receptacle P, as shown in Fig. 1.

The machine above described and shown in the drawings is very simple and durable in construction, can be cheaply manufactured, and is arranged to permit convenient adjustment for treating different minerals.

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

1. A mineral-vanner, consisting of a support, an inclined pan, a perforated water-pipe extending across the upper end of the pan, arms pivoted to the support and to the sides of the pan, means for vibrating the pan, and a horizontal sifter of less length than the pan and supported by and above the pan at about midway between the ends thereof, said sifter having a sieve in its bottom, an apertured distributing-plate arranged therein a short distance above the sieve, and having its ends terminating short of the ends of the sifter, and a chute at the end adjacent to the upper end of the pan, said chute projecting beyond one side of the pan, as set forth.

2. A mineral-vanner, comprising an inclined vibrating pan, a horizontal sifter of less length than the pan and supported by and above the pan at about midway between the ends thereof, the sifter having a sieve in its bottom, a chute at the end adjacent to the upper end of the pan and projecting beyond the side of the said pan to discharge the coarse material directly from the sifter to one side of the machine, and a distributing-plate ar-

ranged in the said sifter a short distance above the sieve, and having large openings, as set forth.

3. A mineral-vanner, comprising a vibrating pan, a horizontal sifter supported by and above the pan at about midway between the ends thereof, the sifter having a sieve in its bottom, a chute at the end adjacent to the upper end of the pan and projecting beyond the side of the said pan to discharge the coarse material directly from the sifter to one side of the machine, and a distributing-plate arranged in the said sifter above the sieve, and having large openings, the ends of the distributing-plate terminating short of the ends of the sifter, as set forth.

4. A mineral-vanner, consisting of a bed, an inclined pan, two pairs of arms pivoted to the bed and to the pan, means for adjusting one pair of arms to give more or less inclination to the pan, means for vibrating the pan, a water-supply at the upper end of the pan, and a horizontal sifter of less length than the pan and supported by and above the pan at about midway between the ends thereof, said sifter having an apertured distributing-plate arranged therein above the sieve and terminating short of the ends thereof and provided with a laterally-extending chute at the end adjacent to the upper end of the pan, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. KRAUSE.

Witnesses:

JOHN C. SCHULTE,
EDWARD W. KRAUSE.