(No Model.) 3 Sheets—Sheet 1.

R. N. CLARK & N. H. CONE.

ORE CONCENTRATING TABLE.

No. 285,970. Patented Oct. 2, 1883.

Fig. 1.

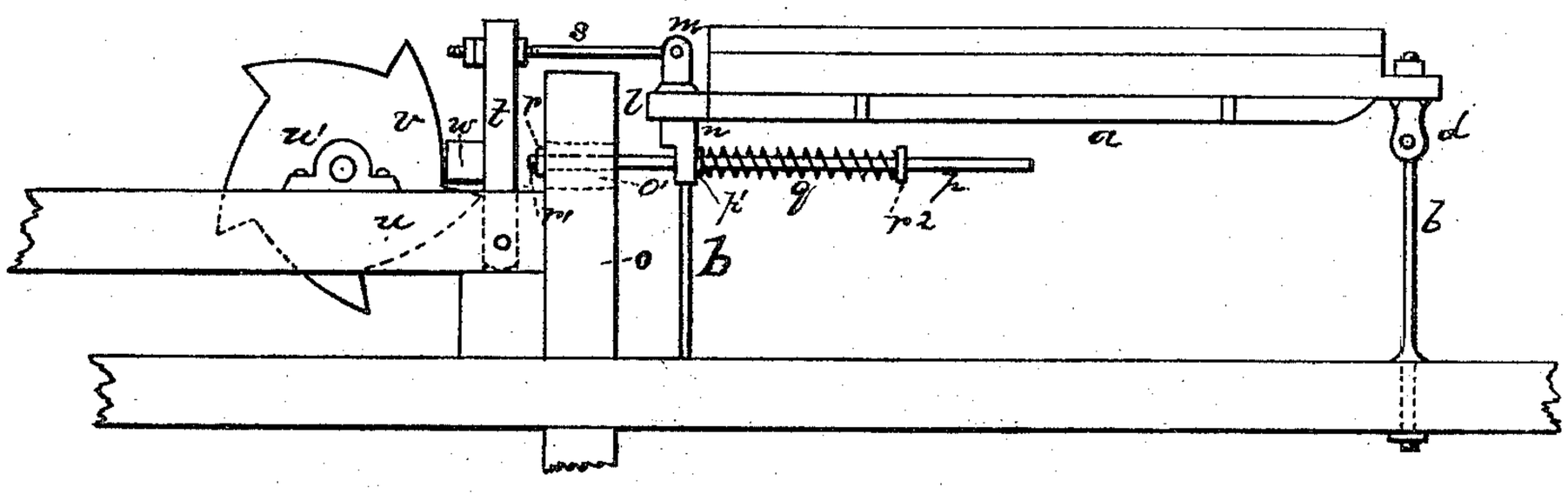


Fig. 2.

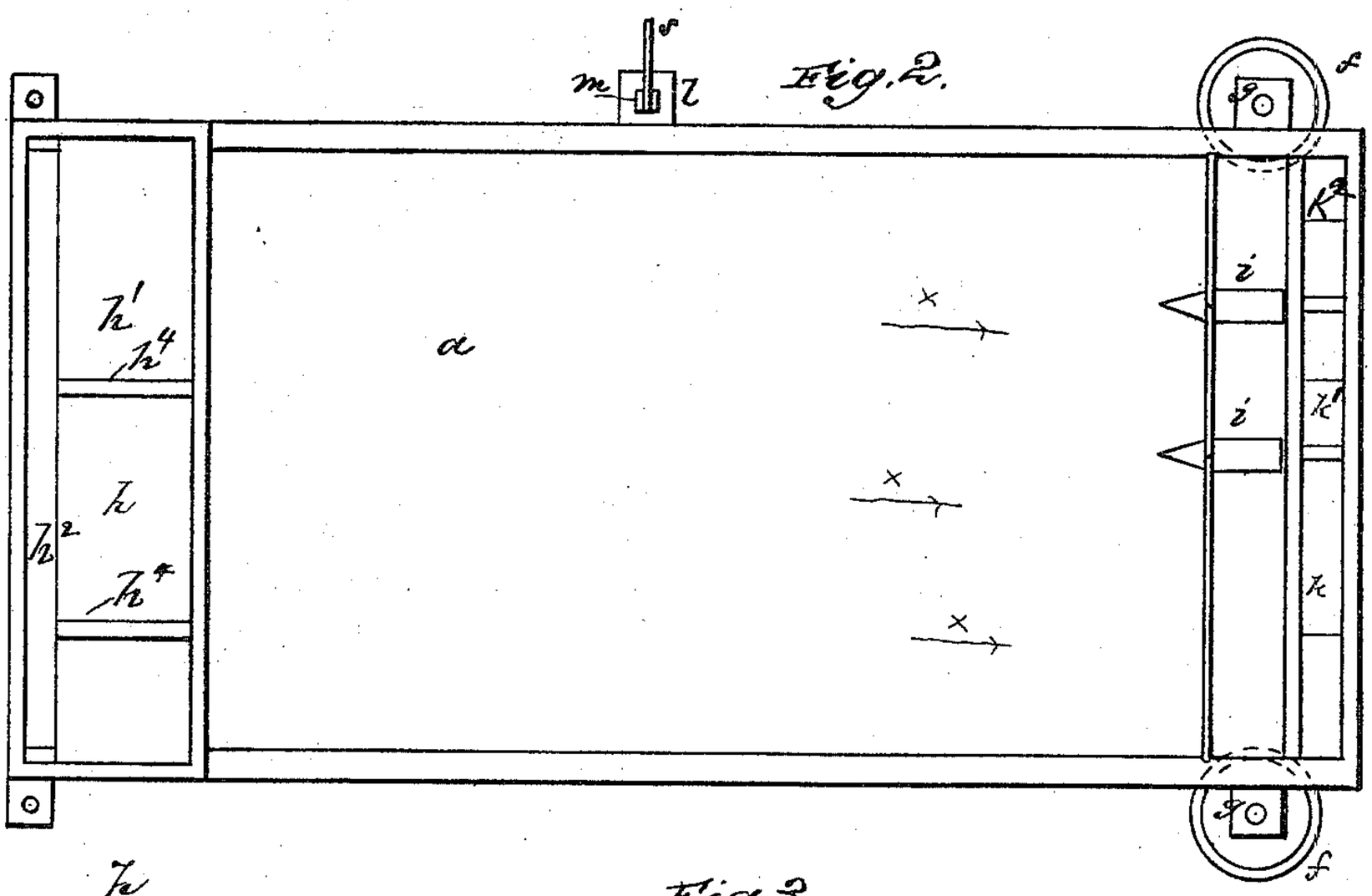
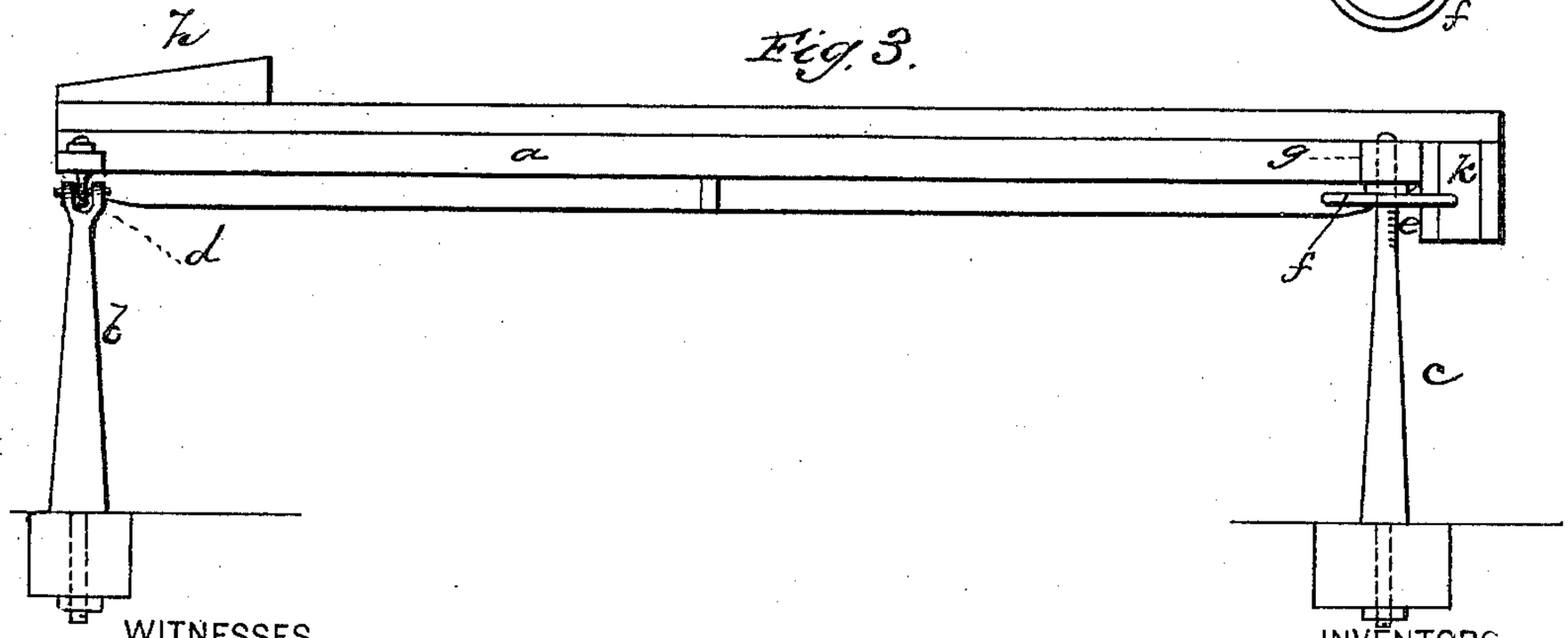


Fig. 3.



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(No Model.) 3 Sheets—Sheet 2.

R. N. CLARK & N. H. CONE.

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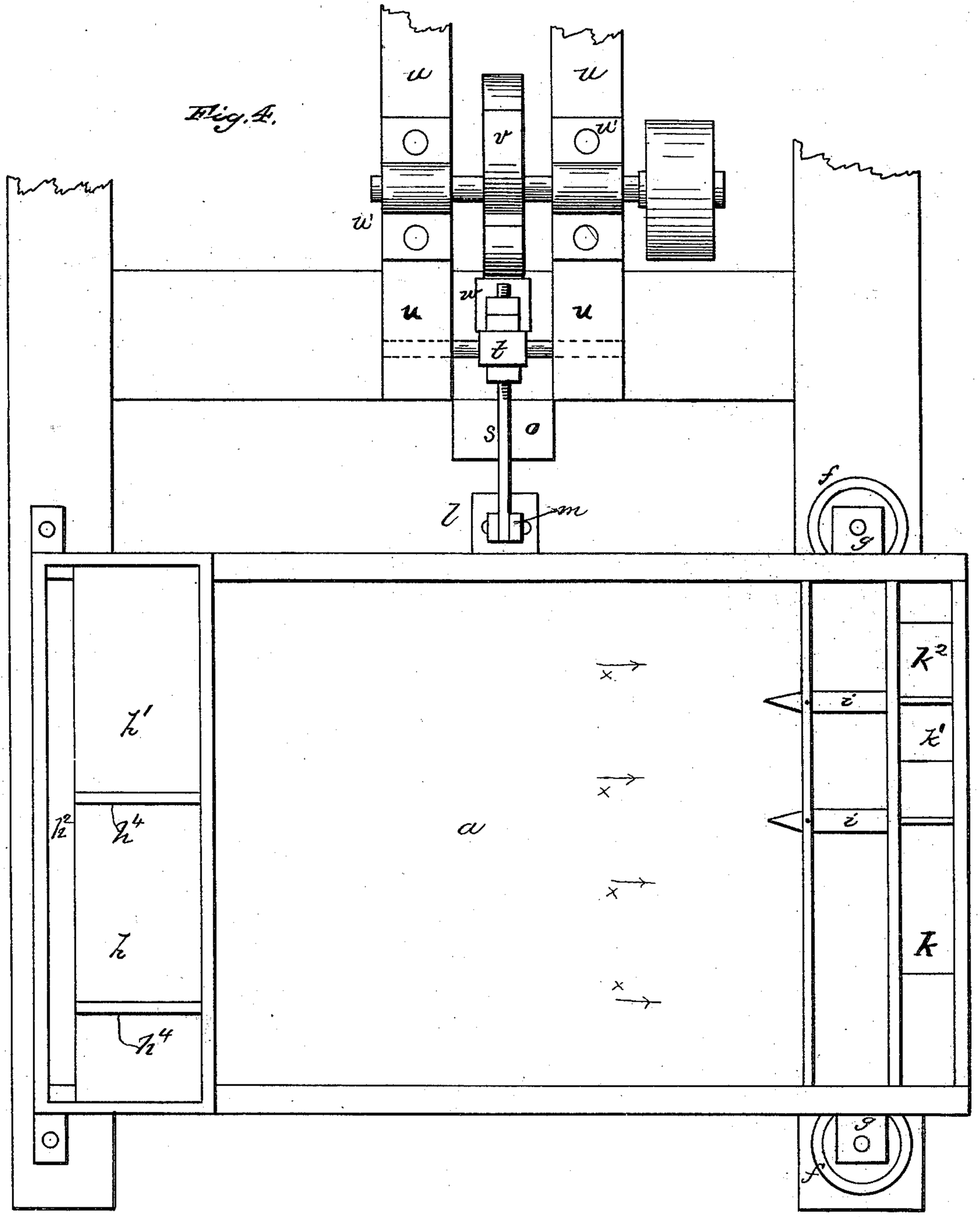
Fig. 4.



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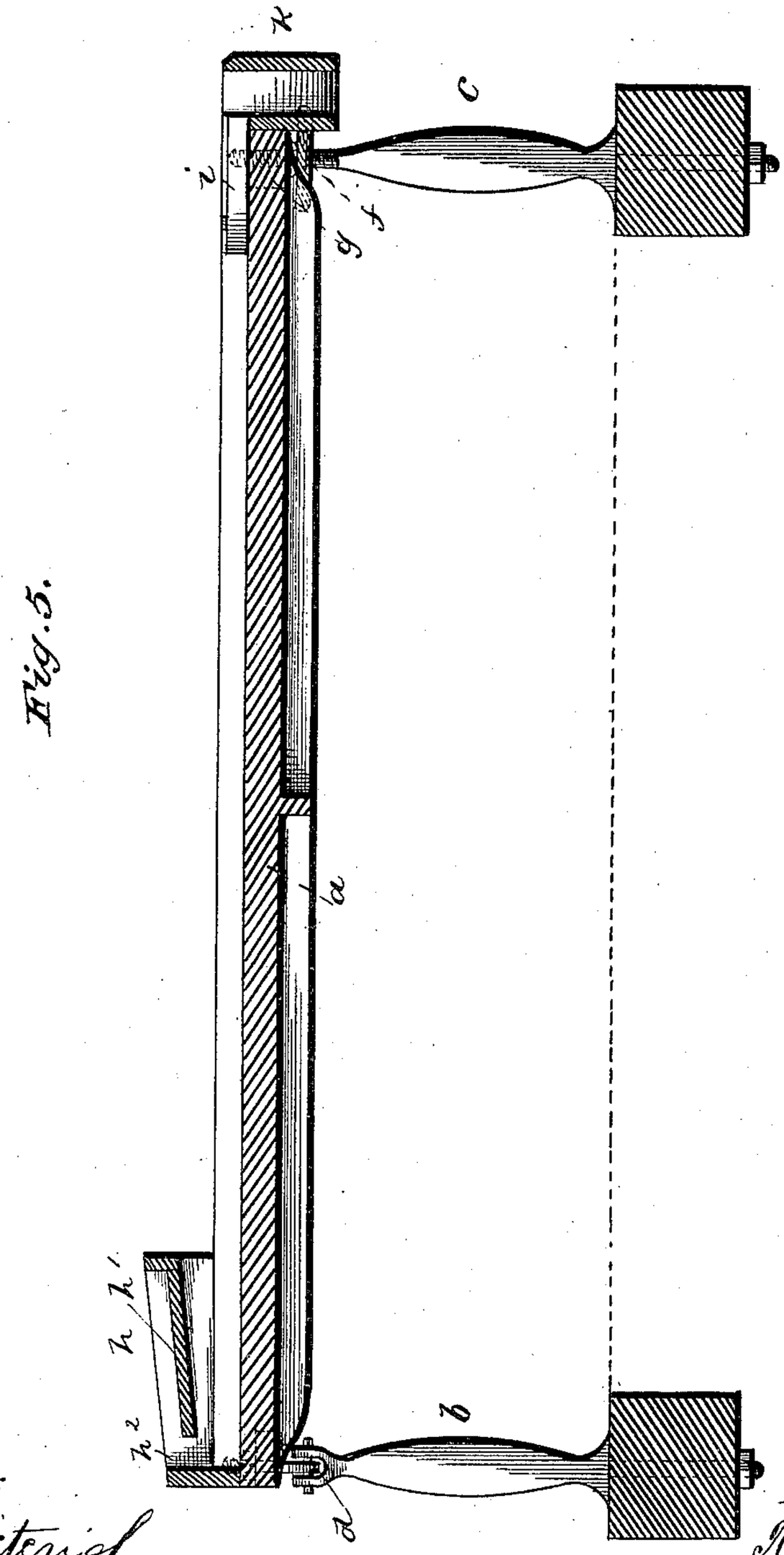
(No Model.) 3 Sheets—Sheet 3.

R. N. CLARK & N. H. CONE.

ORE CONCENTRATING TABLE.

No. 285,970. Patented Oct. 2, 1883.



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UNITED STATES PATENT OFFICE.

R. NEILSON CLARK AND NORRIS H. CONE, OF LEADVILLE, COLORADO.

ORE-CONCENTRATING TABLE.

SPECIFICATION forming part of Letters Patent No. 285,970, dated October 2, 1883.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that we, R. NEILSON CLARK and NORRIS H. CONE, citizens of the United States, residing at Leadville, in the county of Lake and State of Colorado, have invented certain new and useful Improvements in Ore-Concentrating Tables; and we do declare the the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference, marked thereon, which form a part of this specification.

Figure 1 is an end view of our device and its operating mechanism. Fig. 2 is a plan view of the table. Fig. 3 is a side view of the same, and Fig. 4 is a plan view of the table and operating mechanism. Fig. 5 is a central longitudinal sectional view of the table.

This invention has relation to ore-concentrating tables; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

The table may be constructed of wood or iron, or any other suitable material, and may be faced with wood, stone, metal, cement, or other material that will produce a plain even surface, and is preferably about four feet by eight, and rectangular in form. The table *a* is supported on two spring-legs, *b b*, at the head of the table, and two others, *c c*, at the foot thereof, the feet of said legs being firmly secured in a suitable base or frame, as shown. The upper ends of the legs *b b* are hinged to the bed of the table, as shown at *d*, while the upper ends of the legs *c c* are threaded, as at *e*, and provided with hand-wheels *f f*, and their threaded portions pass through lugs *g g*, secured to the sides of the table *a*, near its foot, so that by operating the hand-wheels *f f* the inclination of the table can be changed to the required pitch.

h designates a distributing-board at the upper end of the table, for receiving the pulp and clear water. The distributing-board *h* consists of a frame having an inclined bottom, *h'*, extending transversely of the bed *a*, at the head thereof, and resting on the side strips of the same, so that there is a space between the bed *a* and the bottom of the distributing-board. The incline of the bottom *h'* is downward from its inner to its outer edge, a space, h^2, extending the length of the board, being left between its outer edge and the adjacent side rail of its frame, through which the pulp and water pass to the table. The bottom *h'* is divided by strips h^4 into three compartments, as shown.

At the foot of the table are attached dividers *i i* and hoppers *k k' k²*, for guiding and receiving the poor sands and the different grades of concentrated material.

At one side of the table, at about the middle of its length, is secured a head-block, *l*, in which is secured a bearing, *m*, extending above it, and a collar, *n*, projecting below it, as shown.

o designates a bumper provided with a slot, *o'*, through which a rod, *p*, passes, and is secured by nuts, so as to be adjusted vertically to suit the inclination of the table. The rod *p* extends through the collar *n*, and is provided with a washer, *p'*, which bears against it, and said rod is encircled by a spiral spring, *q*, the ends of which bear against the washer *p'* and a shoulder, r^2.

r represents a nut adapted to be turned on the threaded portion *r'* of the rod *p'*, to regulate the tension of the said spring *q*. A rod, *s*, connects the bearing *m* with a pivoted or swinging arm, *t*, jam-nuts being provided at the junction of said rod and the swinging arm *t*, to provide for any needed adjustment at this point. This arm *t* is pivoted between bars *u*, to which the bearings *u'* for a cam-wheel, *v*, are secured. This arm *t* is provided with a bumping or wearing block, *w*, against which the cam-wheel *v* strikes when rotated, and drives the table away from the bumping-block, causing the collar to move along the rod *p*, contracting the spiral spring, and moving the spring-legs in the same direction until the tooth of the cam slips over the block *w*, when the spiral spring and the spring-legs, in assuming their normal positions, will throw the head-block against the bumper *o*, thus jarring the table, and causing the material of which the pulp is composed to diverge in the direction of the bumper as the material is being flown over the table toward the foot of the same, thereby effecting a separation as well as a concentration of the pulp material.

The distributing-board *h* being separated into compartments, three grades of pulp may

be operated on at once, if desired. The water, being directed upon the pulp on the distributing-board, will wash it down through space h^2 onto the bed of the table, over which it will flow in the direction of the arrows toward the hoppers, of which there are three, at the foot of the table. The operation of the cam *v* upon the table will impart the bumping or jarring motion before described, to the table which will carry the heavier grades of pulp nearest to that side of the bed *a* to which the operating mechanism is attached, the next lighter grade coming near to the heavier grade, while the poor sands are left nearest the other side of the table, to be carried by the water into the hopper *k*, the lighter grades going into the hopper *k'* and the heavier grades into the hopper k^2. By means of the spring-legs supporting the table, it will be allowed to vibrate when acted upon by the cam *v*.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In an ore-concentrator, the table *a*, provided with spring-legs and the head-block *l*, the latter having bearing *m* and collar *n*, in combination with the bumper *o*, adjustable rod *p*, spiral spring *q*, adjusting-nut *r*, rod, *s*, swinging arm *t*, having wear-block *w*, and the cam-wheel *v*, substantially as specified.

2. In an ore-concentrator, the table *a*, provided at its head with the hinged spring-legs *b b* and at its foot with the threaded spring-legs *c c*, having the hand-wheels *f f*, said table also having the head-block *l*, and its bearing and collar *m n* at one side thereof, in combination with the rod *p*, spring *q*, bumper *o*, the rod *s*, swinging arm *t*, and the operating cam-wheel *v*, substantially as specified.

3. In an ore-concentrator, the combination, with the table *a*, of the distributing-board *h*, having the inclined bottom *h'*, the space h^2, and the division-strips h^4, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

R. NEILSON CLARK.
NORRIS H. CONE.

Witnesses:
J. E. McGREW,
N. ROLLINS.