

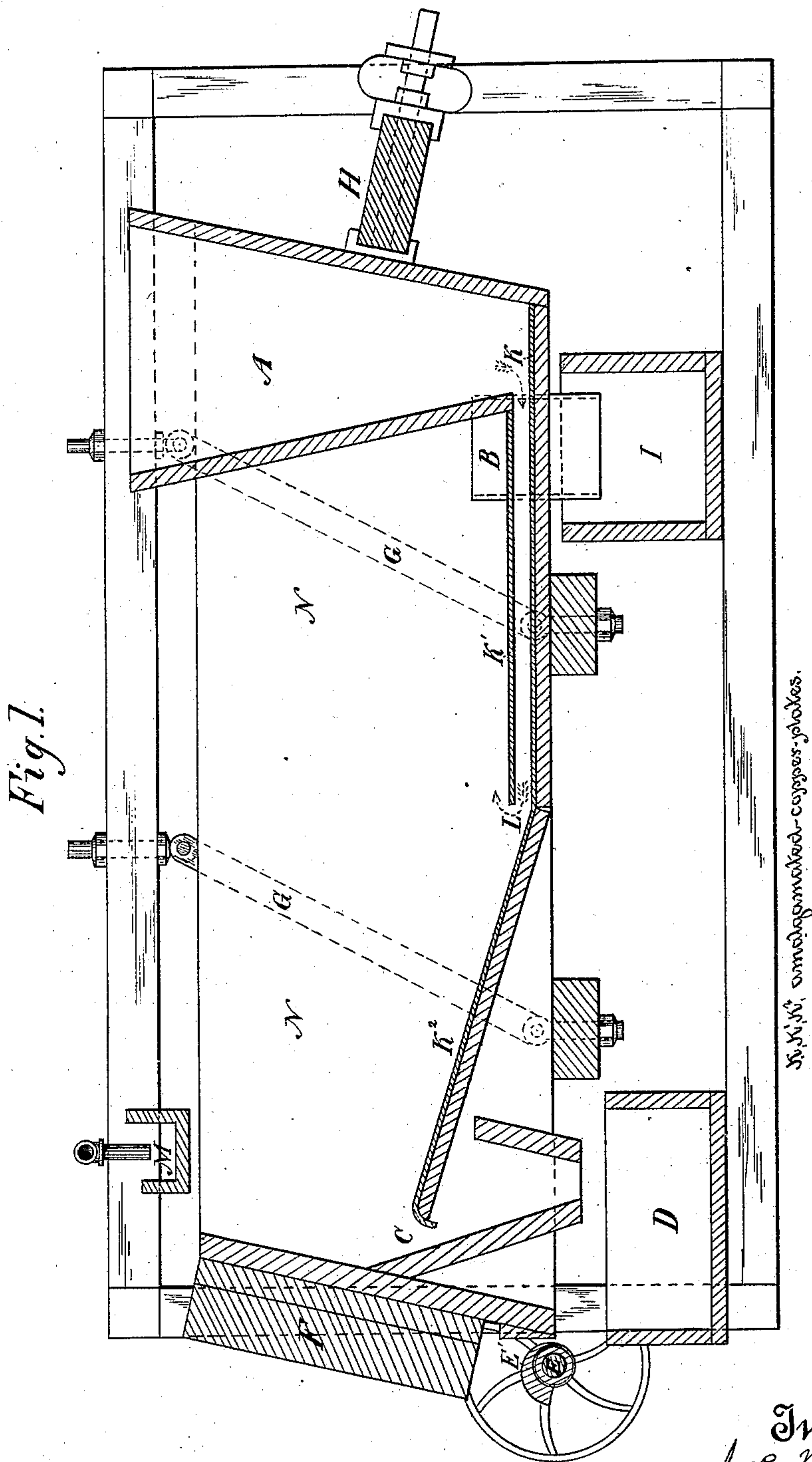
(No Model.)

2 Sheets—Sheet 1.

J. M. DYER.
AMALGAMATOR.

No. 308,657.

Patented Dec. 2, 1884.



Witnesses,
Geo. H. Strong
J. H. Vauke.

Inventor,
J. M. Dyer
By Dewey & Co.
Attorneys

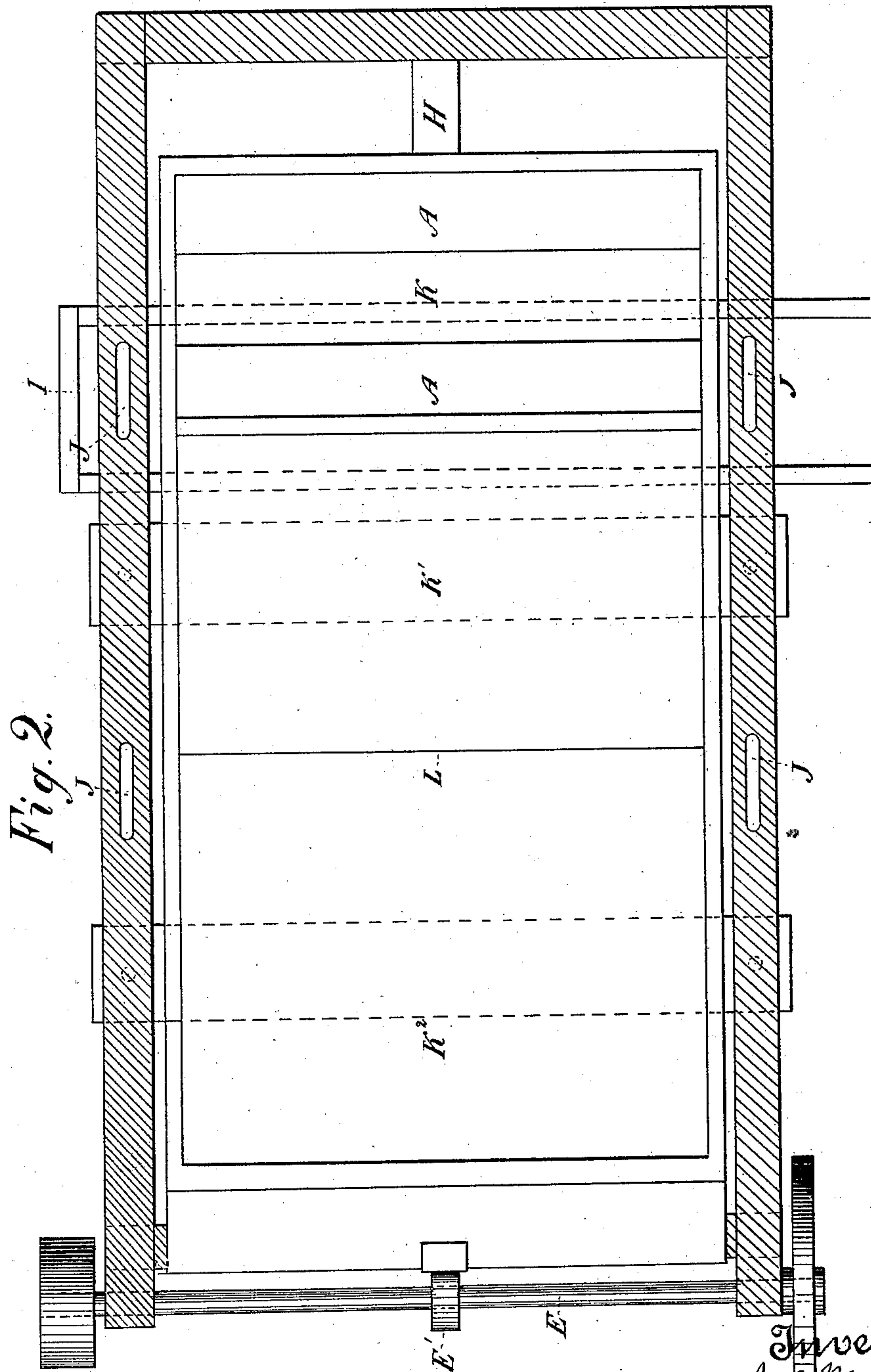
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Geo. H. Strong.
J. L. Nourse.

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UNITED STATES PATENT OFFICE.

JAMES M. DYER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-THIRD
TO THE GLOBE IRON WORKS, OF SAME PLACE.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 308,657, dated December 2, 1884.

Application filed June 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. DYER, of the city and county of San Francisco, and State of California, have invented an Improvement in Amalgamators; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improved apparatus for separating valuable heavy portions of auriferous or other ores from the tailings or less valuable portions, concentrating these heavier particles, and amalgamating those portions which are capable of amalgamation; and it consists of an apparatus by which this operation may be carried on, and which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the apparatus. Fig. 2 is a plan view.

A is a hopper or receiver into which the pulp or material to be concentrated is delivered, and from the lower part of which it passes into the space between two copper or amalgamated plates, K. These plates extend the full width of the table, the first portion, K', of which may be nearly or quite horizontal. The lower plate may be secured to this table, and the upper one is separated from it to any suitable distance to allow the pulp to pass between the two. The second portion, K², of the table inclines upwardly at a greater angle than the first part, and the lower portion of the amalgamated plate continues along its surface to its upper discharge end. This bottom is secured between sides N, and the whole is securely fastened together with transverse timbers, as shown. The box or table thus formed is suspended from some point above by means of hangers, rods, or arms G, which have their upper ends pivoted above, while the lower ends are pivoted to the sides of the table, or to eyes in the cross-timbers beneath, so that the arms G will stand at a considerable angle with a horizontal or vertical line, as shown. This angle may be changed by moving the plates or eyes from which the rods are suspended in slots J, formed in the timbers of the frame from which the apparatus is suspended, the angle being made greater or less by this movement.

E is a shaft having a pulley, by which it may be rotated, and a cam, E', secured to it. This cam acts against a block at the end of the table opposite to the hopper A, and pushes it slowly backward and downward, moving about the points and support of the arms G. A spring, H, acts against the rear end of the table and resists the action of the cam E', so that when the cam has passed the block and released it the table swings forward and upward with a quick motion until the edges of its sides strike against the bumpers F, which are placed in proper position to receive the blow. This action causes the pulp to move along between the plates K K', and the concentration commences at this point, the heavier portion settling on the lower plate, while the lighter portions pass along near the upper one until they reach the point where the upper plate stops at L, and there they flow out. The lighter pulp and tailings flow backward over the top of the upper plate, K', until they reach openings B in the sides of the table, through which they flow into the discharge sluice-box I and escape. The heavier material—sulphurets, amalgam, &c.—after leaving the space between the copper plates, is forced up the more inclined portion of the table K² by the constant succession of shocks, and from the peculiar manner of hanging the table by the inclined rods G these shocks are given in an upward forward direction, and this causes the concentrated material to move rapidly up the incline to the point C, where it is discharged into the sluice or box at D.

M is a box placed above the upper end of the incline portion of the table, and having a water-supply pipe, the box being so arranged as to discharge clear water upon the table, so as to flow down the incline and assist in separating and cleaning the sulphurets and other heavy material.

It will be manifest that the desired action of the table might be produced by giving it a sudden backward movement just at the end of the forward stroke, which, with the inclined hangers, produces a sort of forward tossing motion. This movement may be effected by any well-known mechanism for giving a variable speed.

I do not claim, broadly, a percussion-table, as I am aware that such have been used before; but

I do claim as new and desire to secure by
5 Letters Patent—

1. A table having an inclined bottom, a feed or supply hopper at one end, and plates K K', between which the material is caused to pass, together with discharge-openings B,
10 to which the tailings may be returned above the upper plate, and through which they are discharged.

2. A table having a feed or supply hopper at one end, plates extending from the hopper
15 toward the opposite end, and between which the material must pass, an inclined portion of

the table extending upward from a point where the double plates terminate, discharge-openings B, to which the tailings pass over the upper plate, and inclined supporting links 20 or hangers, together with a means for producing percussive action of the table, by which the heavier portions are caused to pass up the inclined portion of the table and be separated from the tailings, as herein described. 25

In witness whereof I have hereunto set my hand.

JAMES M. DYER.

Witnesses:

S. H. NOURSE,

J. H. BLOOD.