

No. 657,393.

Patented Sept. 4, 1900.

J. BUSS.

APPARATUS FOR CONCENTRATING AND SEPARATING ORES, &c.

(Application filed Feb. 12, 1900.)

(No Model.)

Fig. 1.

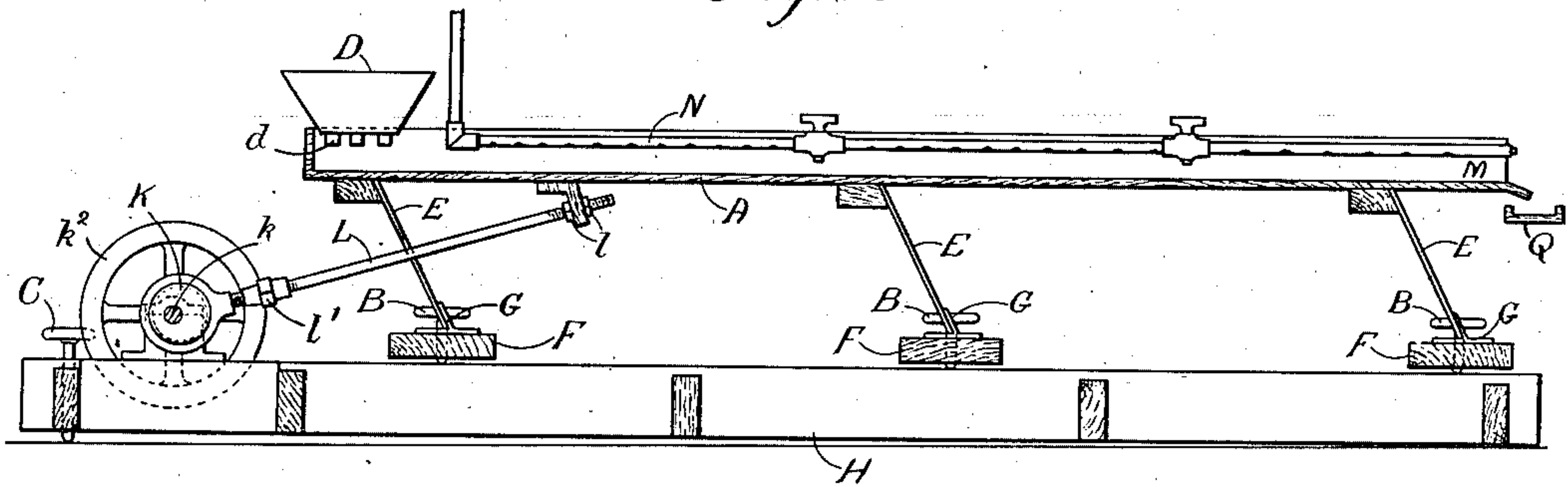


Fig. 3.

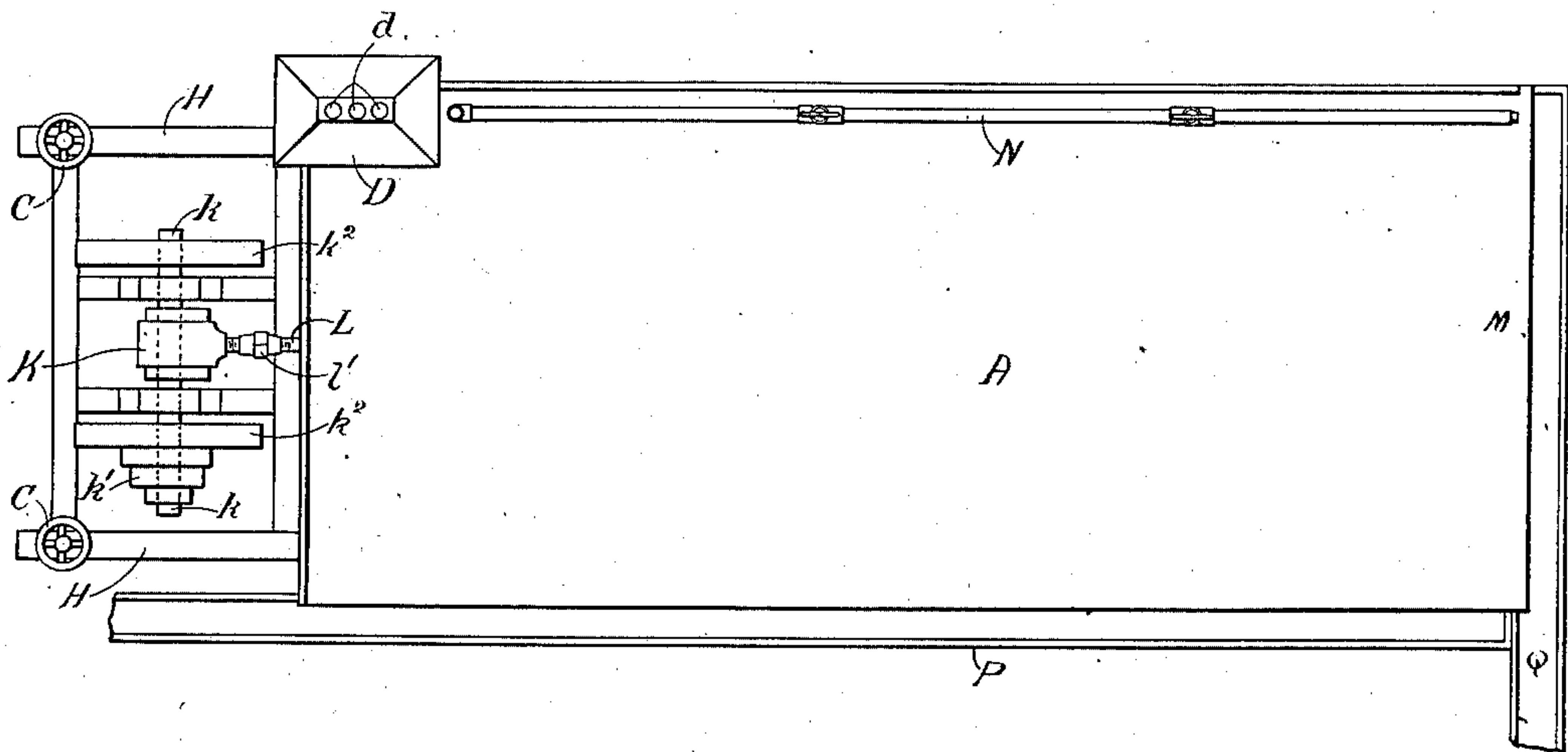
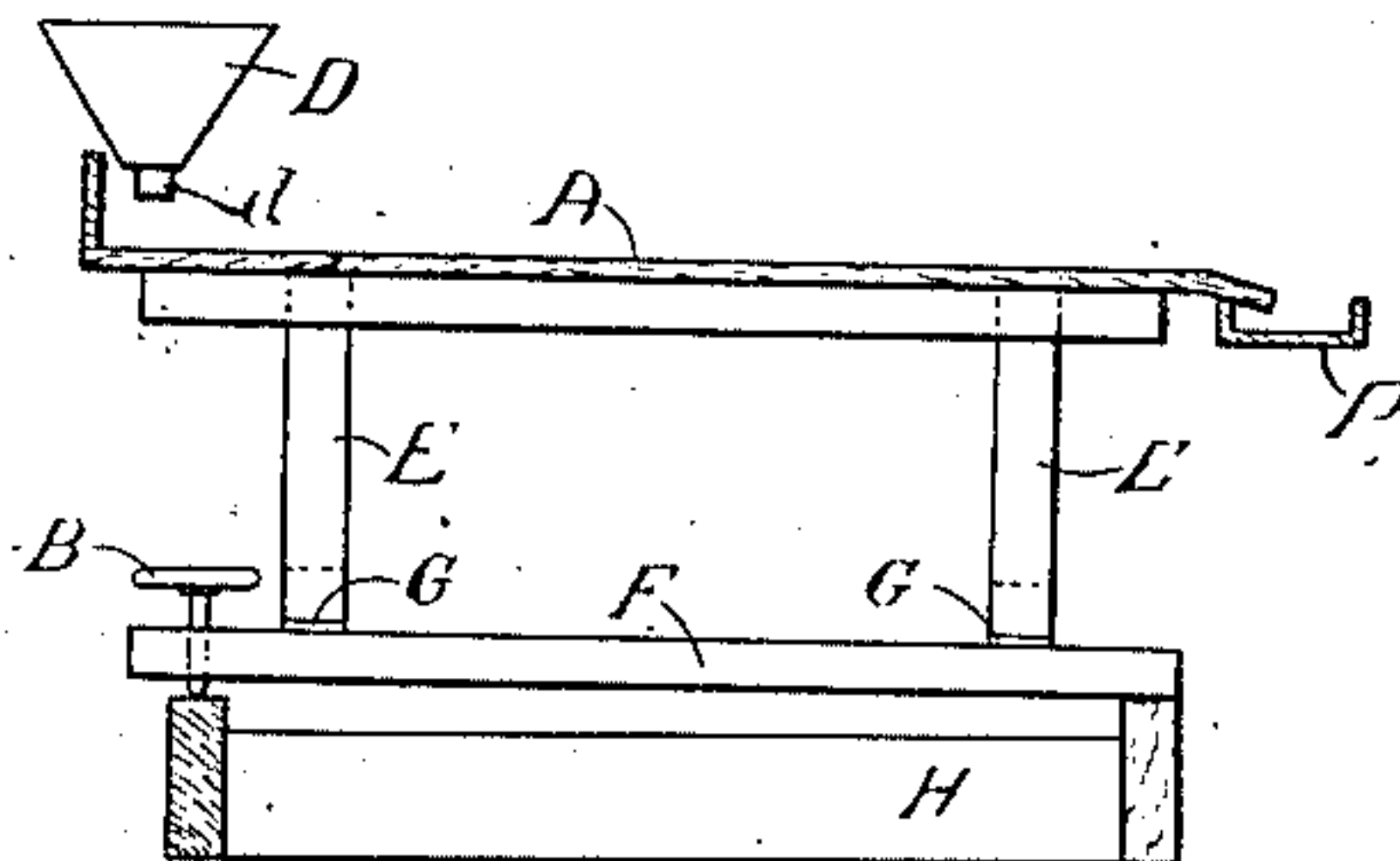


Fig. 2.



WITNESSES:  
Ella L. Gile  
O. L. Gile

INVENTOR  
Julius Buss  
BY  
Richardson  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

JULIUS BUSS, OF LONDON, ENGLAND.

APPARATUS FOR CONCENTRATING AND SEPARATING ORES, &c.

SPECIFICATION forming part of Letters Patent No. 657,393, dated September 4, 1900.

Application filed February 12, 1900. Serial No. 4,999. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS BUSS, a subject of the Queen of Great Britain and Ireland, and a resident of 32 Victoria street, Westminster, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Apparatus for Concentrating and Separating Ores and other Substances, (for which I have made application for a patent in Great Britain, No. 11,440, dated June 1, 1899,) of which the following is a specification.

This invention relates to ore concentrators or separators of that kind in which the action of water flowing over a reciprocating table is employed.

I will describe my invention in detail in reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the apparatus, partly in section. Fig. 2 is a transverse section of Fig. 1, and Fig. 3 is a plan.

In the drawings, A is the rectangular table, onto which the mineral ore or other substance to be treated is fed by a feed-trough D, suitably supported and situated at the upper end or corner of the table A and provided with holes  $d$ , through which the pulp is fed. The table A is supported on a number of springs or resilient supports E, attached thereto and made of wood or other suitable material. These springs E are, as shown in Fig. 1, disposed at an angle to the longitudinal axis of the table and held in position by brackets G, fixed on cross-pieces F. The cross-pieces F rest upon a frame H and are provided at their upper ends with adjusting-screws B, by means of which the transverse inclination of the table can be increased or decreased, as required. Similar adjusting-screws C are provided at one end of frame H for adjusting the longitudinal inclination of the table. The table receives its peculiar reciprocating upward and downward movement in an oblique direction from an eccentric K, which acts with the springs E and is connected to the table by a rod L. This eccentric is suitably mounted on a shaft  $k$ , arranged in an extension of the frame H and is driven by speed-pulleys  $k'$ , and suitable fly-wheels  $k^2$  are provided. The eccentric K is

made so as to be adjustable for increasing or decreasing the stroke of the rod L, which latter is also arranged to be lengthened or shortened, as required—for instance, by nuts  $l$  or  $l'$ —whereby the angle of the springs E may be adjusted.

N is a water-supply pipe perforated with small holes and arranged either longitudinally on the upper edge of the table or diagonally across same.

P and Q are the usual discharging-chutes disposed at the lower side and end of the table.

It will be obvious that without departing from the nature of my invention the table A may, instead of resting in a frame on springs F, be suspended by springs or flexible parts from a frame above the table, the arrangement being such as to allow of the table being inclined transversely and longitudinally and reciprocated in the peculiar manner described.

In operation the pulp is fed onto the upper end or corner of the table by the feed-trough D, as described, and the peculiar reciprocating upward and downward movement in an oblique direction imparted to the table by the eccentric K and springs E causes the material to be separated into layers according to the specific gravity of its components and to be carried longitudinally forward toward the end M of the table and at the same time downward transversely, the table being transversely inclined. As is usual with this class of apparatus, the material in its passage across the table is subjected to the action of water pouring downward thereover transversely from the perforated water-pipe N. Through this continued action of the peculiar movement of the table and water flowing transversely the various materials are separated one from another according to their specific gravity and in a more effectual manner than is the case with existing machines of this class. The lighter particles are washed downward transversely and discharge over the lower side of the table into the chute P. The heavier parts, traveling faster and offering more resistance to the water, are carried toward the end of the table and discharged over its end M into chute Q, from which they are removed to proper receptacles.



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

In combination, the table A, resilient supports therefor arranged in pairs, independent devices carrying each pair of said supports vertically adjustable to tilt the table transversely, a support common to all of said devices for vertically adjusting the same to  
5 tilt the table longitudinally, a feed-hopper at  
10 the upper front corner of the table and a per-

forated pipe above the table arranged parallel with and in proximity to the upper side edge of the table, substantially as described.

In witness whereof I have hereunto signed 15 my name in the presence of two subscribing witnesses.

JULIUS BUSS.

Witnesses:

GEORGE MILLER LIGHT,

WILLIAM JAMES MATTHEWS.