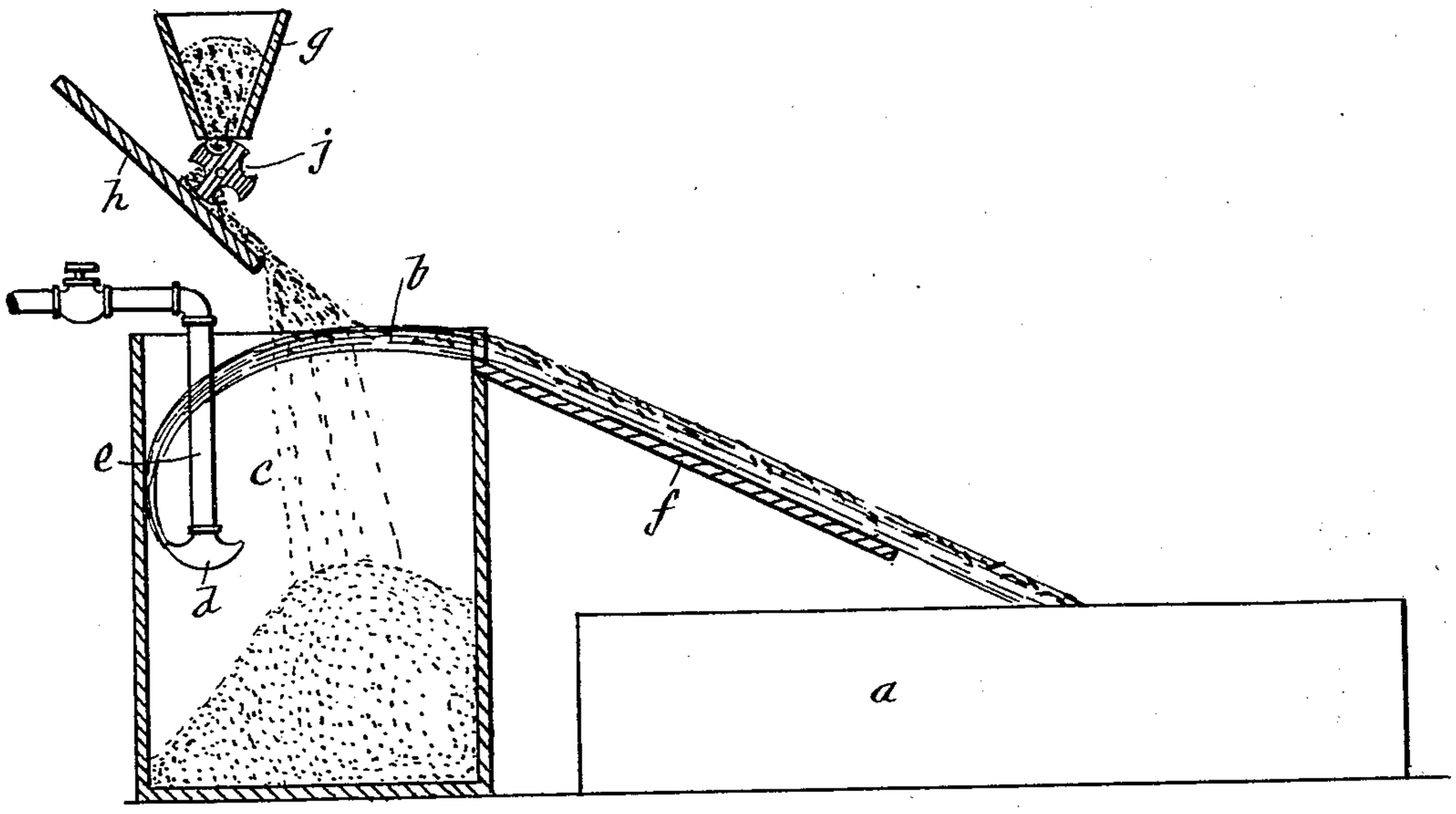
No. 678,860. Patented July 23, 1901.

H. P. H. BRUMELL.

APPARATUS FOR SEPARATING OR CONCENTRATING MINERALS OR ORES.

(Application filed Sept. 8, 1899.)

(No Model.)



Witnesses
R. A. Kimber
A. W. Kimber

Inventor
Henry Pearetk Hawdon Brumell

By his Attorney
Alohn N. Swan

UNITED STATES PATENT OFFICE.

HENRY PEARETH HAWDON BRUMELL, OF BUCKINGHAM, CANADA.

APPARATUS FOR SEPARATING OR CONCENTRATING MINERALS OR ORES.

SPECIFICATION forming part of Letters Patent No. 678,860, dated July 23, 1901.

Application filed September 8, 1899. Serial No. 729,869. (No model.)

To all whom it may concern:

Be it known that I, HENRY PEARETH HAWDON BRUMELL, of the town of Buckingham, in the county of Ottawa and Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Apparatus for Separating or Concentrating Minerals or Ores; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to the separation or concentration of minerals or ores, and more especially graphite ores of molybdenum, mica, and other minerals; and the invention consists in providing an apparatus for feeding the disintegrated and dried ore upon a moving body of water, so that the minerals which by their physical characters will float shall be carried beyond those that will not float.

The main essential is a moving sheet or body of water such as will carry along with it upon its surface and into one receptacle the minerals that will float, while those that will not float drop into another receptacle, and in the illustration *a* indicates any usual receptacle for the graphite or other mineral, which may be carried to it by a broad flat stream or body *b* of water thrown across the upper end of a receptacle *c* for the sand or other heavier mineral substance not carried away by the stream and which drops through it into such receptacle.

The desired form of water stream is secured by the water issuing from a rose *d* on the end of the supply-pipe *e*, projecting down a short distance into the receptacle *c* and near one side thereof, the outlet side of the rose being turned upward and arranged to direct the water against the inside face of the adjacent side of such receptacle, which deflects it in the curve or arc shown across the top of the receptacle and onto an inclined apron *f*, leading from the end of the opposite side of the said receptacle *c* into the graphite-receptacle *a*.

The disintegrated and dried ore is fed to the stream through a hopper *g* and down a glancing-board *h*, a rotating horizontal fluted roller or shaft *j* being located at the outlet end of the hopper, so as to secure a regular feed.

The treatment of the mineral in my present apparatus is distinguished from the treatment in other apparatus by the fact that the mineral is separated or concentrated when dry upon the surface of the water instead of wet in the water or dry in air.

I do not herein claim my improved process which is followed in the treatment of minerals comprising elements of different specific gravity by my improved apparatus.

What I claim is as follows:

In an apparatus for separating or concentrating minerals or ores, a vessel adapted to contain a body of still water, a water-supply pipe projecting into said tank below the water-level, said pipe being provided with a nozzle having a discharge directed toward a point of the end wall of the vessel intermediate the water-level and the level of the nozzle, whereby a thin stream of water will be projected against said wall and deflected thereby across the surface of the body of water in the vessel to a discharge at the opposite end of the vessel, and a hopper adapted to deliver the material to be separated to said stream, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY PEARETH HAWDON BRUMELL.

Witnesses:
W. H. COX,
WILLIAM P. MCFEAT.