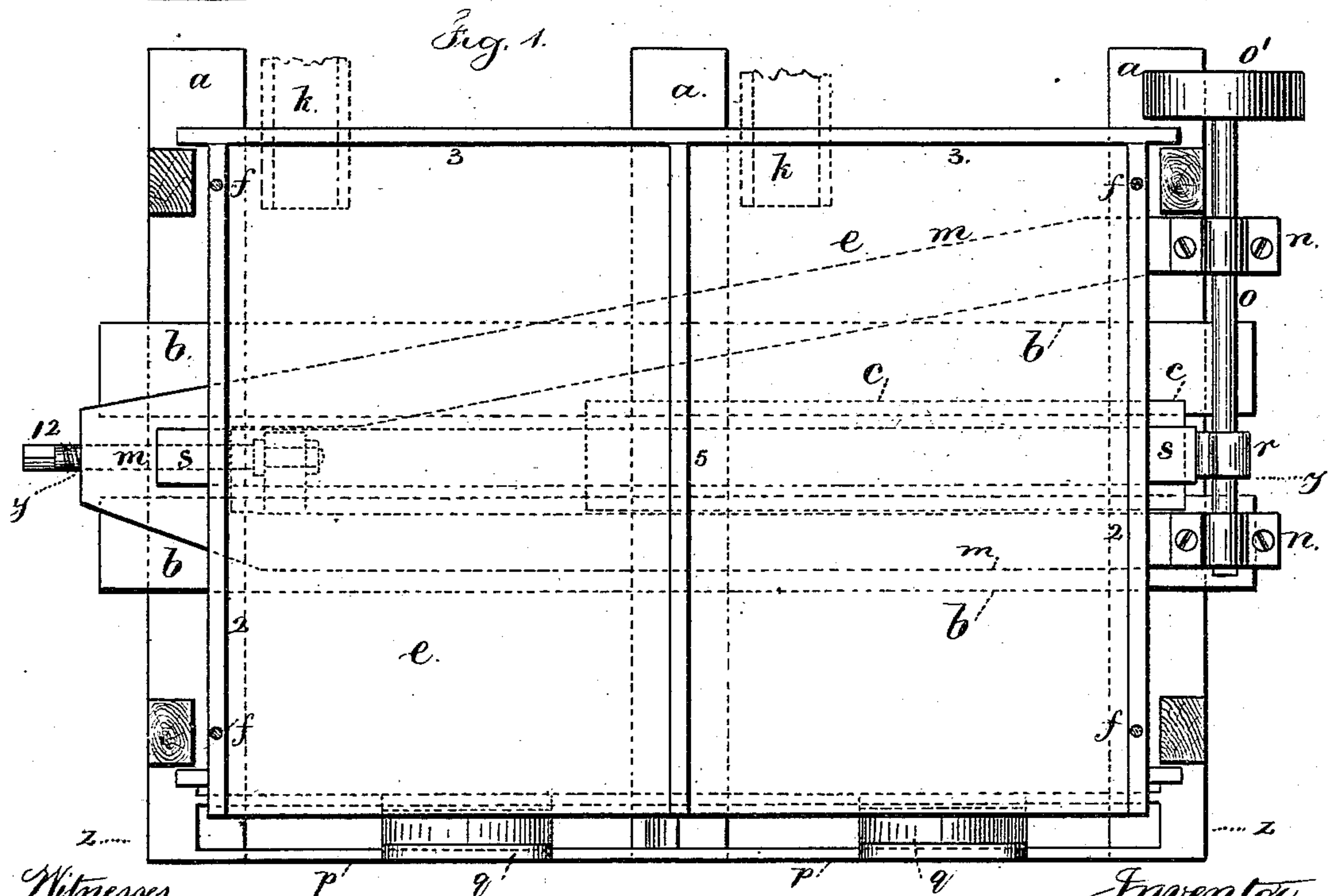
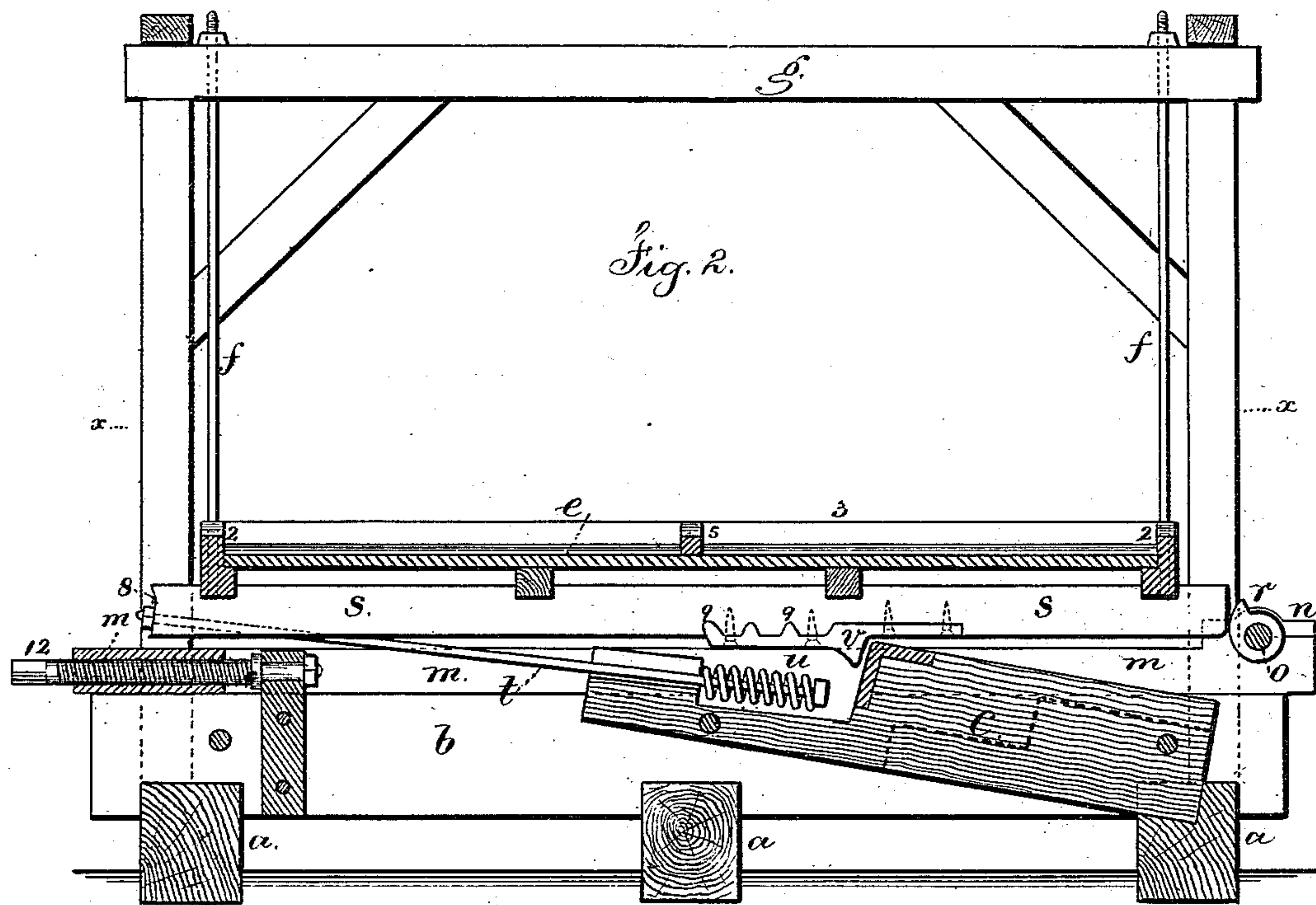


J. B. WILFORD.  
Separator for Ores.

No. 226,258.

Patented April 6, 1880.



Witnesses  
Chas. H. Smith  
Harold Ferrell

Inventor  
John B. Wilford  
per L. W. Ferrell atty

J. B. WILFORD.  
Separator for Ores.

No. 226,258.

Patented April 6, 1880.

Fig. 4.

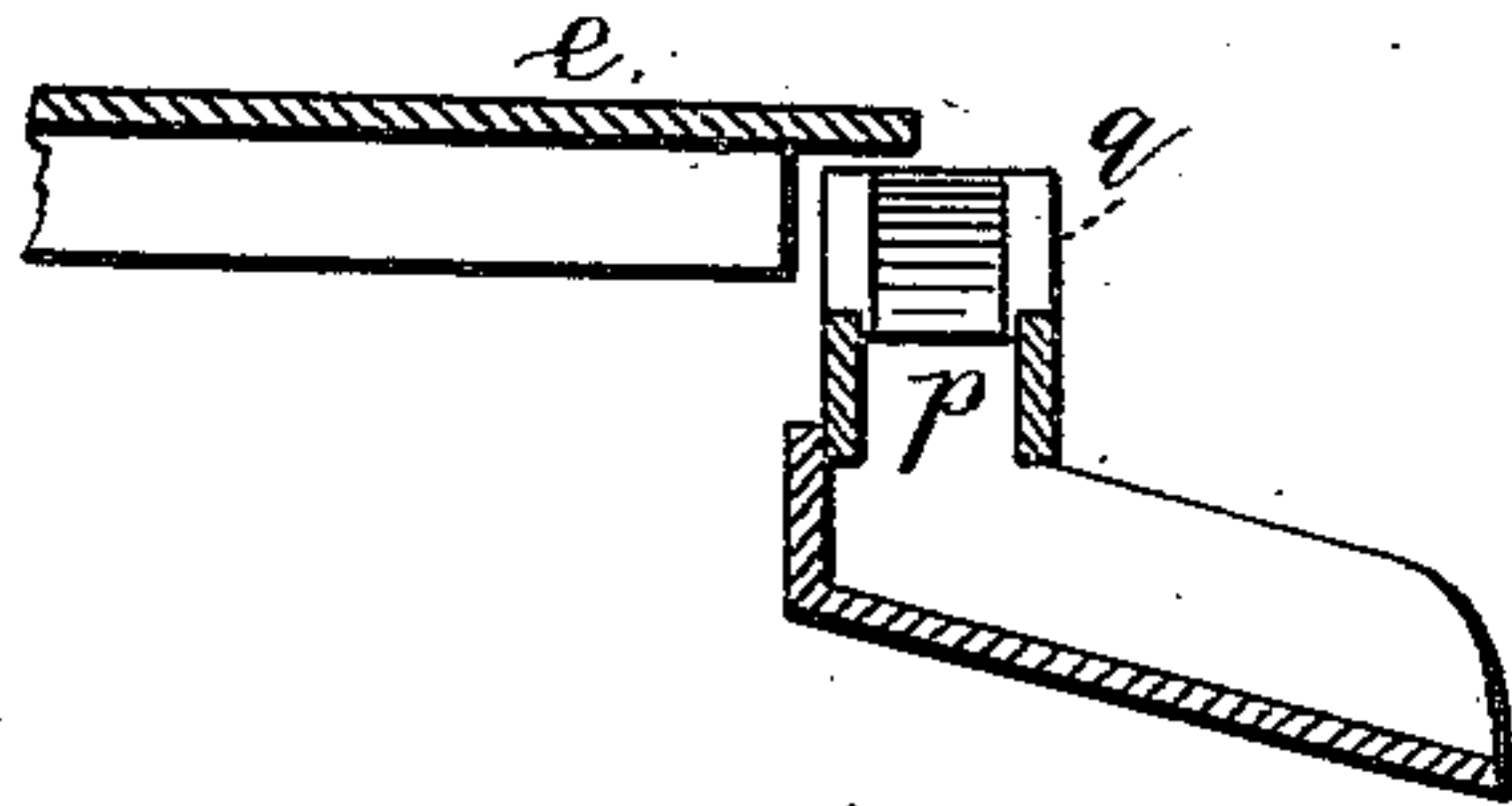
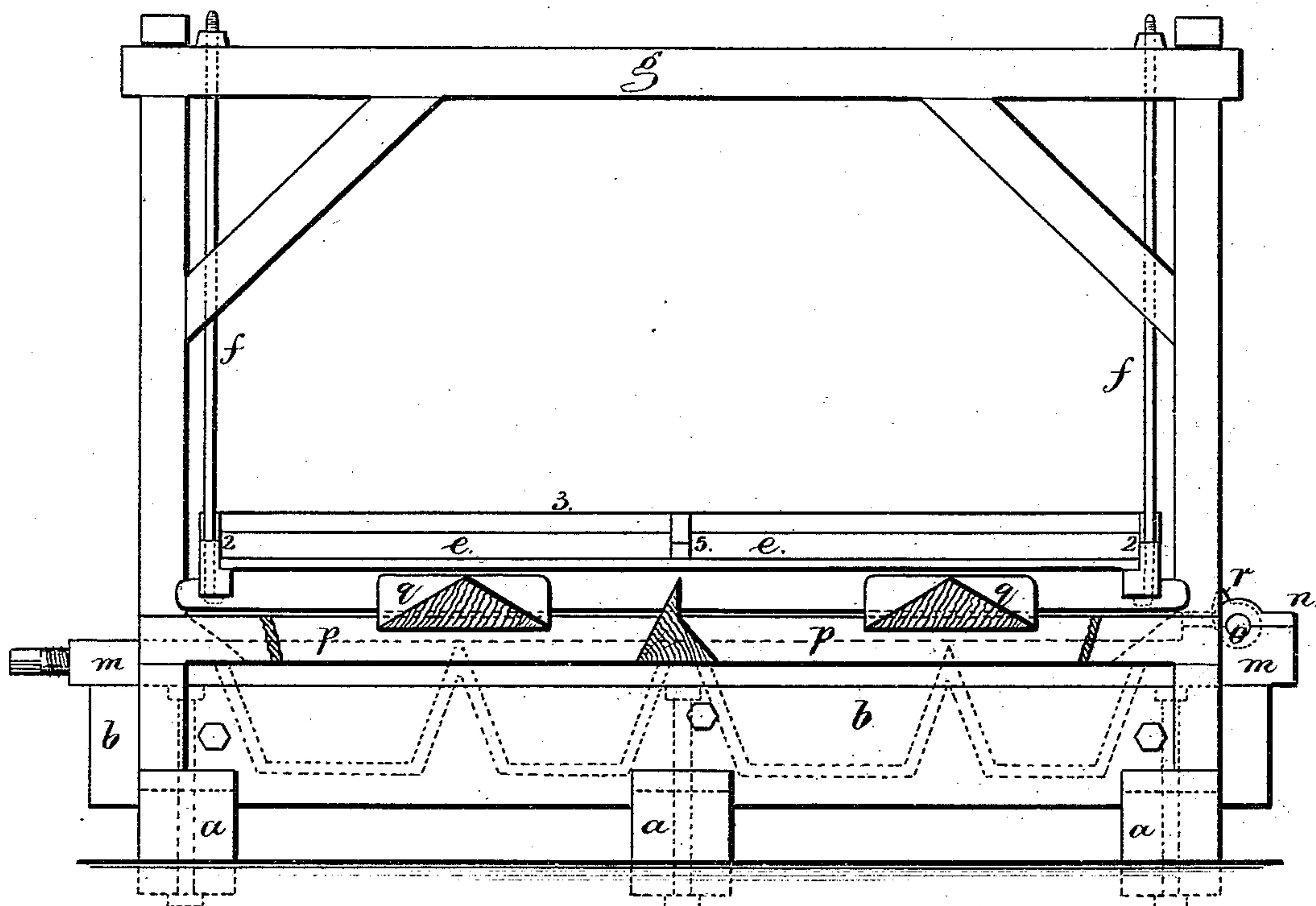


Fig. 3.



Witnesses

Chas. H. Smith  
Harold Ferrell

Inventor

John B. Wilford  
for Lemuel W. Ferrell  
att'y



# UNITED STATES PATENT OFFICE.

JOHN B. WILFORD, OF PHILADELPHIA, PENNSYLVANIA.

## SEPARATOR FOR ORES.

SPECIFICATION forming part of Letters Patent No. 226,258, dated April 6, 1880.

Application filed July 7, 1879.

*To all whom it may concern:*

Be it known that I, JOHN B. WILFORD, of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Separators for Ores and other substances of different specific gravity, of which the following is a specification.

This improvement relates to the separator usually known as a "slime-table," for separating very fine ores. The water and ore have been allowed to flow upon the table, and a sudden sidewise movement has been given to such table to separate the heavier particles from the lighter ones as the same flow over the table.

In my improvement I provide means for directing the ore one way and the sand another way as it leaves the edge of the table, so that the surface of the table is not obstructed by directing boards or strips, as heretofore, and hence I obtain the entire surface of the table to separate upon. I also construct the machine so that the amount of motion is easily adjusted and the concussion of the table is allowed for without risk of injury to the parts.

In the drawings, Figure 1 is a plan below the line *x x* of Fig. 2, and Fig. 2 is a vertical section at the line *y y*. Fig. 3 is a section at the line *z z* of Fig. 1, and Fig. 4 is a partial section through the edge of the slime table and trough.

The sill-timbers *a a* are to be framed into the sleepers *b b* and securely bolted together. The abutment-timber *c* is between the sleepers *b b*, and wider than the space that there is between *b b*, as seen in Fig. 1 by dotted lines, so that it is let into recesses cut in the opposite faces of the sleepers *b b*, and the end of this abutment *c* rests into a recess in one of the sills *a*, as seen in Fig. 2. The parts are bolted together, and the blow of the slime-table is received on the end of the abutment *c* and distributed on the other parts of the foundation-framing with uniformity, so as to prevent injury.

The slime-table *e* is suspended by the rods *f* from the head-frame *g*, and these rods *f* are provided with nuts, so as to adjust the inclination of the table. There are rims on the two sides and the back of the slime-table, as at 2 3, and the fine substances and water are received upon the upper part of the table by a

chute, as seen by the dotted lines at *k*, Fig. 1. The slime-table may be divided into two or more parts by partitions. The table shown has the one partition 5.

Resting upon the sleepers *b* there is a V-shaped frame, *m*, with boxes *n* for the driving-shaft *o*, having a pulley, *o'*, and a cam, *r*. This cam is preferably a single scroll, but it may have more than one point, and it acts against the beam *s* that runs across under the slime-table, and to which the frame of said table is securely bolted.

The cam *r* gives motion in one direction to the slime-table, and in so doing the rod *t* is moved with the beam *s* and compresses the spring *u*, that is placed within a recess in the abutment *c*. Hence said spring expands and moves the slime-table suddenly the other way when the end of the cam *r* passes clear of the end of *s*. The nut 8 on the rod *t* serves to adjust the tension of the spring *u*.

The movement given to the slime-table is suddenly arrested by the hammer-block *v* striking against the anvil at the end of the abutment *c*. This hammer-block is made with lugs 9, that are let into the beam *s*, to prevent the concussion separating the hammer from the beam, said hammer being bolted firmly thereto.

The V-shaped frame *m* can be moved endwise by the screw 12, and in so doing the shaft *o* is brought nearer to or farther from the end of the beam *s*, and hence the movement given to the same and to the slime-table by the cam is adjusted.

The operation of the slime-table in separating the heavier from the lighter particles is well known, and it is usual to allow the materials to pass over the edge of the table, the ore or metal going into one receptacle and the refuse into another. The line of separation on the table varies in consequence of the differences in the quality of the material supplied, and there generally has been a movable separator lying upon the surface of the table, the same being placed by the operator according to his judgment. If any of the metallic particles are caught by this separator, they are carried to the waste. Hence the slime-table is not operative below the point of this separator, and the useful surface is contracted

to that extent. I avoid these difficulties by allowing all the materials to run over from the edge of the slime-table, and I provide a movable divider, *q*, that is supported upon the edges of the trough *p*. Said divider is made as a double-inclined trough. Hence the apex of the inclines becomes the point of separation, and the attendant moves this divider along beneath the edge of the slime-table to the proper point to turn the metals off in one direction and the refuse in the other direction.

Receptacles may be provided below the trough *p*, or chutes may be employed, as denoted by the dotted lines in Fig. 3, to take the ore off in one direction, while the refuse goes by the other trough or chute.

I claim as my invention—

1. The combination, with the slime-table and its actuating mechanism, of the abutment *c*, sleepers *b b*, and sills *a a*, framed and bolted together, substantially as set forth, whereby the concussion on the foundation-framing is distributed, as specified.

2. The frame *m*, carrying the actuating-shaft *o*, in combination with the adjusting-screw 12, slime-table, and foundation-framing, substantially as set forth.

3. The combination, with the abutment *c*, the slime-table, and its beam *s*, of the hammer-block *v*, made with lugs let into the beam, and bolts to connect the same, substantially as set forth.

4. The combination, with the slime-table, of the separate movable divider *q* below the delivery edge of the said table, and the supports for said divider, running parallel, or nearly so, to the edge of the slime-table, whereby the divider can be moved along beneath the edge of the table, for the purposes and substantially as set forth.

Signed by me this 30th day of June, A. D. 1879.

JOHN B. WILFORD.

Witnesses:

GEO. T. PINCKNEY,  
CHAS. H. SMITH.