

J. PERRY.
Ore Washer.

No. 12,069.

Patented Dec. 12, 1854.

Fig: 1.

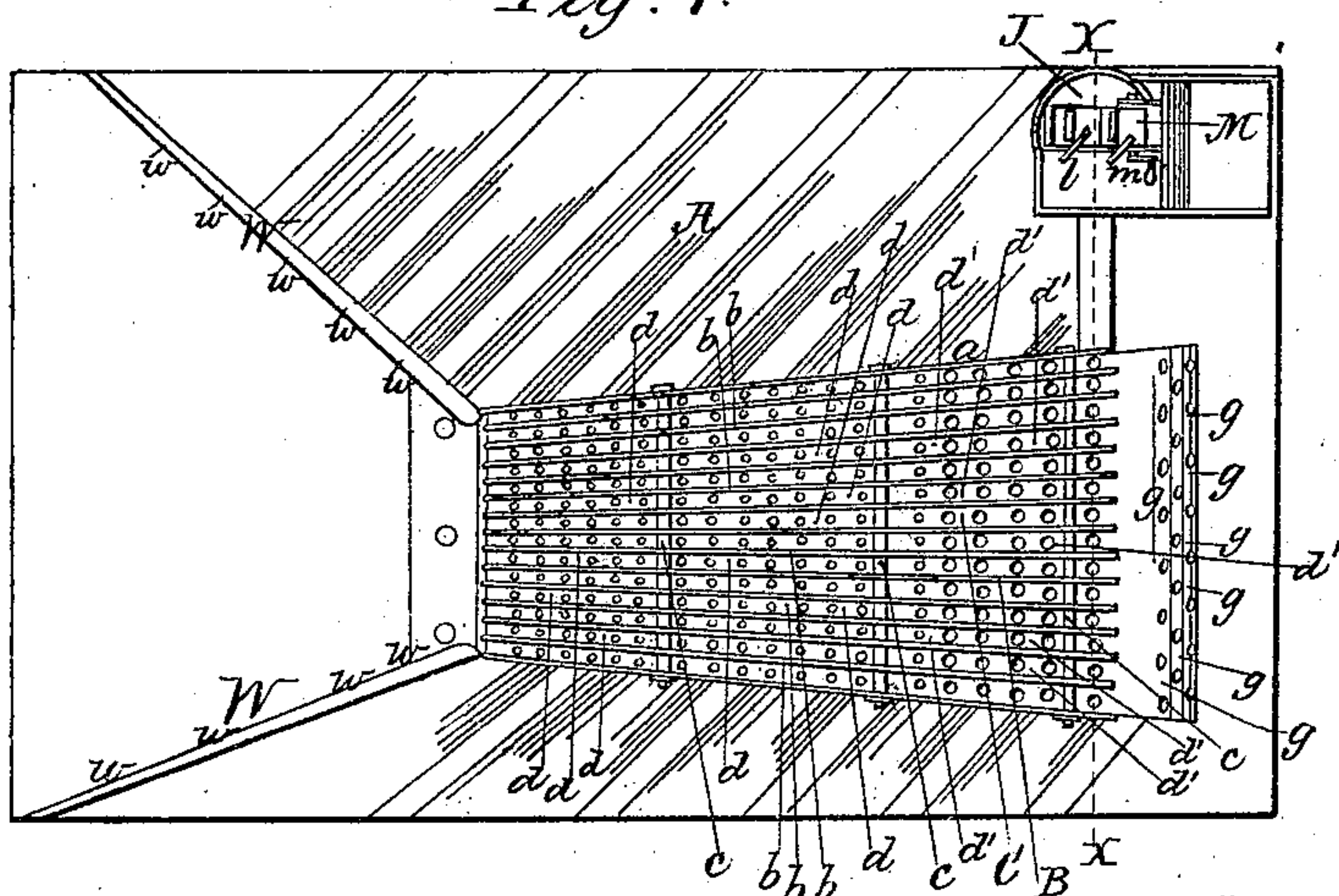


Fig: 2.

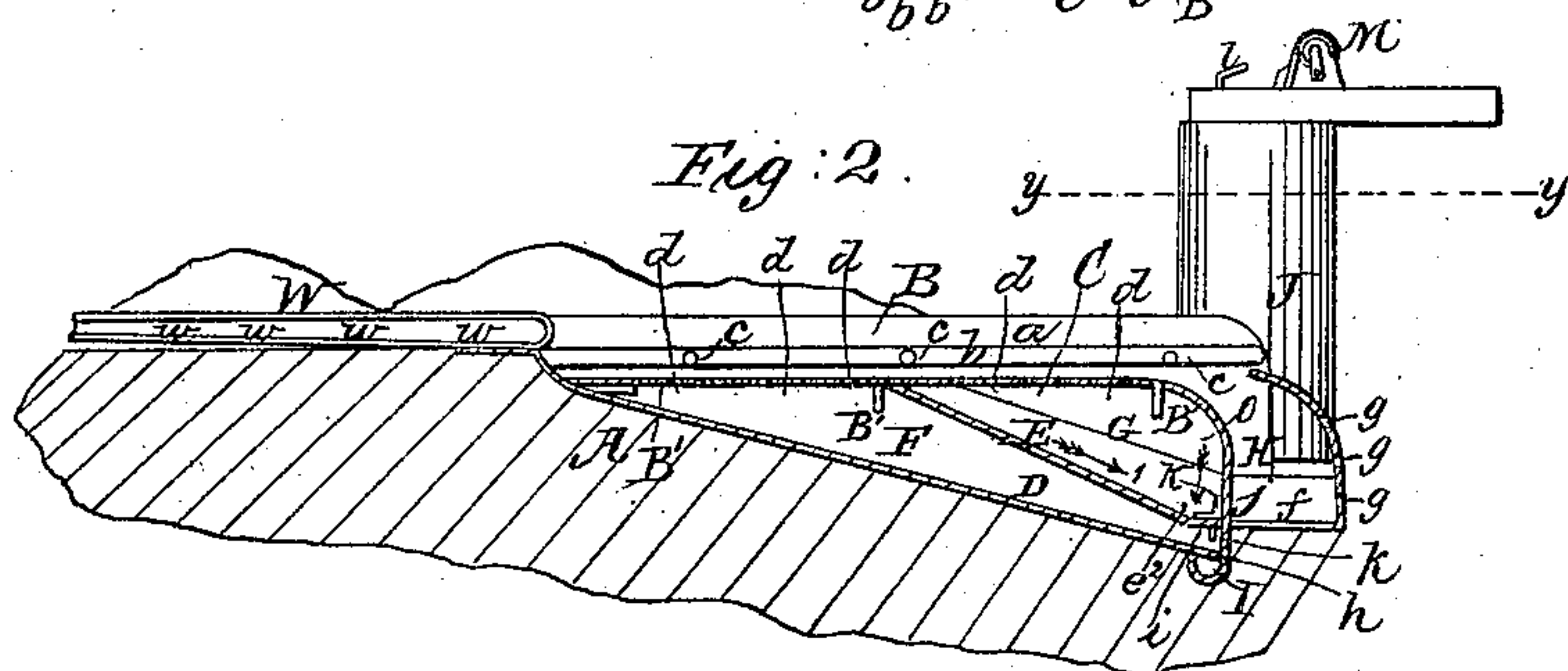
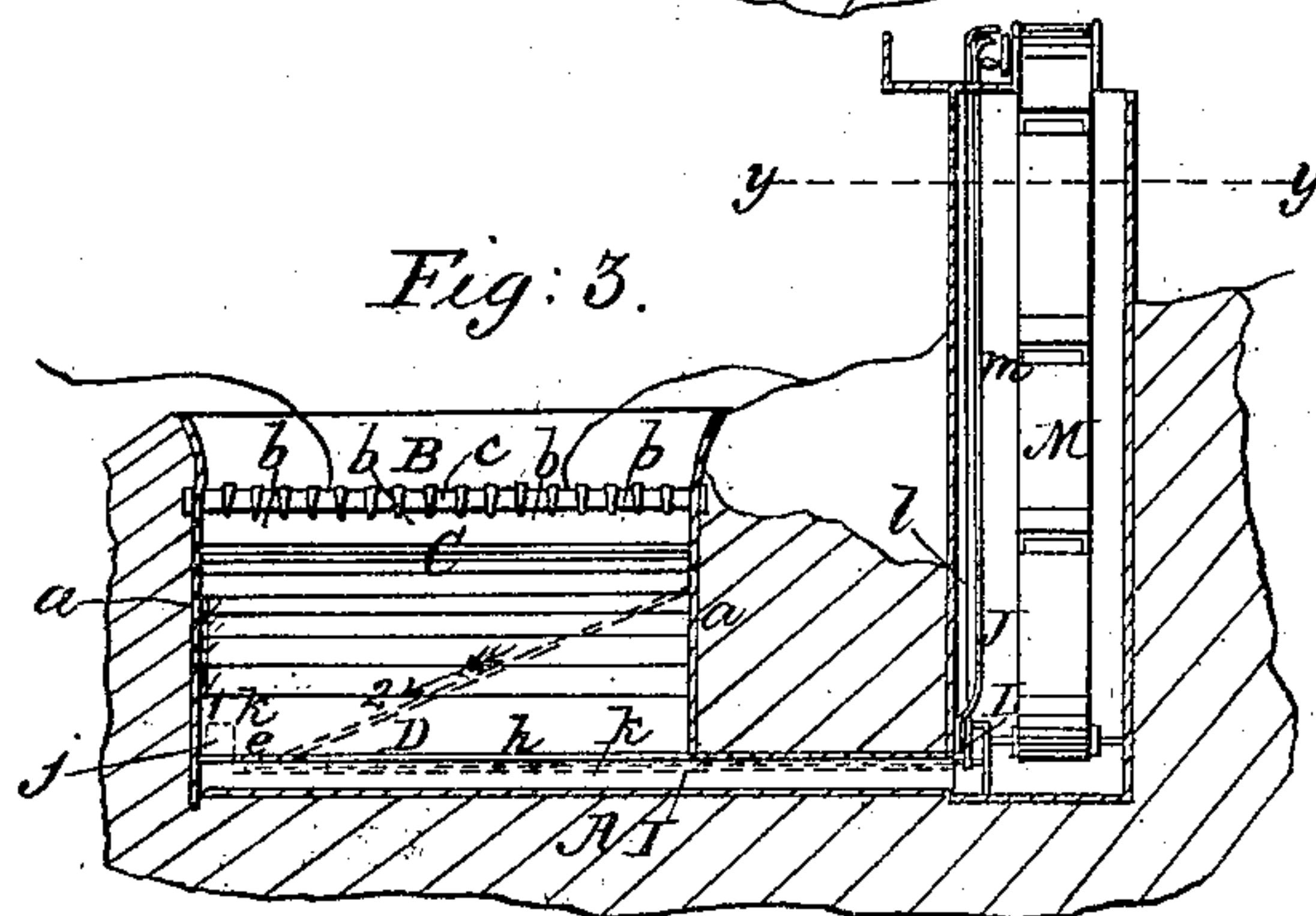


Fig: 3.



Witnesses.
S. H. Bales,
J. M. Hamilton.

Inventor
James Perry

UNITED STATES PATENT OFFICE.

JAMES PERRY, OF NEW YORK, N. Y.

IMPROVED GOLD-COLLECTOR.

Specification forming part of Letters Patent No. 12,069, dated December 12, 1854.

To all whom it may concern:

Be it known that I, JAMES PERRY, of the city, county, and State of New York, have invented certain new and useful Improvements in the Apparatus for Collecting Ores in Rivers, Streams, Gulches, Ravines, &c., preparatory to the separation of precious metals therefrom, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan or top view; Fig. 2, a longitudinal vertical section; and Fig. 3, a cross-vertical section, taken at the line X X of Fig. 1.

The said drawings represent my improved apparatus as located in the bed of a river, and the same letters indicate like parts in all the figures.

In all rivers, streams, gulches, ravines, &c., containing the precious metals, or in which such metals are found, the force of the current carries the precious metals and the ores thereof down stream, mixed with stones, rocks, and other foreign substances; and the object of my invention is to collect the metals or ores thereof or substances containing or mixed therewith, for the purpose of the after separation of the precious metals from such foreign substances by other means; but in collecting such substances it is important to effect, as near as practicable, a separation of the substances likely to contain the precious metals from large stones or rocks and other substances which are carried along the beds of such streams by the force of the current, and one of the chief objects of my invention is to effect such partial separation; and as the height of water in such localities is liable to great fluctuations, and when the waters are high the supply of the precious metals is more abundant than when the waters are low, one of the objects of my invention is to adapt my improved apparatus to the collection of such substances at all heights of water, and in such manner that the substances collected can be obtained without removing the apparatus from the bed of the stream in which it is located.

In the accompanying drawings, A represents the bed of a river or other stream with my improved apparatus placed in a declivity there-

of; but when a suitable declivity cannot be found the bottom can be excavated for the purpose, as it is desirable to have the top on a level with or below the general line of the bottom of the stream.

The said apparatus is composed of two vertical sides, *a a*, inclined to each other longitudinally, so as to be near together toward the head of the stream and gradually spreading out toward the other end. Near the top of these two sides is a screen, B, composed of bars *b* secured at proper distances apart by means of rods and interposed collars *c c*, the bars being nearer together at the up-stream end than at the other end in the proportion of the divergence of the two sides to prevent clogging or the lodgment of anything between the bars by the force of the current; and for the same reason the bars may be thicker at their upper edges, so that anything that may enter between their upper edges will be sure to pass through.

Below the screen there is a plate, C, perforated with ranges of holes *d*, there being one such range just under each space between the bars of the screen, and this plate at the down-stream end should be at a greater distance below the screen than its up-stream end for the purpose, also, of preventing any substances from lodging between it and the screen. This plate at its edges is properly secured to the two sides *a a*, and the up-stream end is secured to the upper end of an inclined bottom, D, and its down-stream end is bent over, as represented in Fig. 2. The holes in the plate C are smallest at the up-stream end—say from three-eighths to one-half inch—and gradually increased in size toward the other end, where they are from three-fourths to one inch, and the object of having them smallest at the up-stream end is to prevent too much débris entering the holes at the upper end with the substances designed to be collected, as will be fully explained hereinafter; and at the lower end of the bottom D there is a transverse trunk, I, secured to the said bottom and to the lower edge of the plate C, a narrow slot, *h*, being left between this part of the plate C and the lower end of the bottom D, through which all the substances that fall through the holes in the

plate C onto the bottom D are discharged into this trunk I.

The box formed by the sides *a a*, the top plate, C, and the bottom D is divided into two compartments, F and G, by a partition, E, which is inclined longitudinally and laterally, as indicated by the arrows in Figs. 2 and 3. From this it will be seen that the substances which pass through the largest holes in the plate C into the compartment G will run down to one corner by reason of the double inclination of the partition E, and near the lowest corner there is an aperture, *e*, governed by a valve, K, which, when opened, will permit the substances in the compartment G to fall into the transverse trunk I; but so long as this valve is closed the substances collected in the compartment G will be kept separate from those discharged from the compartment F into the trunk.

Beyond the down-stream end of the plate C there is a pocket or receptacle, H, formed by a curved perforated plate, *g*, attached to the end of the screen B and to a bottom, *f*, which is inclined from one side to the other, like the partition E, and a hole is cut in the plate C, governed, also, by the valve K, before described, which has two wings, *i* and *j*. The purpose of this pocket or receptacle H is to catch the substances that pass between the bars of the screen and that fail to pass through the holes of the plate C. The heavier portions of the substances thus entering the pocket H will run down the inclined bottom to the valve K, while the lighter matter will be washed away by the current of water through the holes in the plate *g* and at the sides.

The trunk I communicates with the lower end of a vertical trunk or receptacle, J, which extends above the level of high water *y y*, and which is provided with an elevator, M, of the usual construction, and consisting of a belt or chain provided with buckets and passing around a drum at top and one at bottom, for the purpose of elevating the substances which are collected by the apparatus and discharged into this vertical trunk; but it is not absolutely necessary to have this trunk so high as to extend above the high-water mark. It may be made of less height, as in many localities when the water rises to a great height it soon subsides, and then access can be had to the substances which have been collected in the meantime.

The valve K is attached to one end of a rod, *k*, that passes through the trunk I, the other end of which is connected with a crank at the lower end of a vertical rod, *l*, by which the valve is operated, the said rod extending up to the top of the trunk J. At the junction of the trunks I and J there is a gate, L, operated by a rod, *m*, to close or open the passage between the two.

To avoid the necessity of making the apparatus of great width, and yet to insure the passage of the washings of the whole stream over it, wings W W, constructed of any suitable

material, may be arranged at the forward end, and spreading out to the sides of the stream and properly secured to the bottom, so that the whole force of the current, together with the substances carried by it, will be directed toward the apparatus.

The apparatus, as well as the wings, may be secured to the bottom in any suitable manner known to engineers, and, as stated before, located on a declining portion of the bottom or in an excavation made for it, so as to have the screen on the general line of the bottom, and being thus located the debris containing gold or other precious substances desired to be collected are carried over the screen by the force of the current, and in passing over the large stones, &c., will pass over the bars of the screen, while the smaller particles will fall between the bars onto the perforated plate C, and the small particles of gold and other precious substances will fall through the small holes *d* in the front part of the plate and run down the inclined bottom D and through the slot *h* at the lower end thereof into the trunk I. The larger particles with more of the debris will pass through the larger holes *d'* into the compartment G and run down the double declivity of the partition E to the valve K, and there collect until the valve is opened; but so long as the valve is closed the agitation due to the force of the current of water will tend to float up and out the lighter substances that may fall through, and the still larger particles that pass through the screen and not through the holes *d'* will fall into the pocket H and run down the inclined bottom thereof to the valve K, the force of the current washing and separating the lighter substances and carrying them out through the holes in the plate *g*, so that by the time the valve K is opened much of the foreign substances will have been carried away, and what remains will pass through the valve into the trunk I, and thence into the vertical trunk J, thence to be taken out by the elevator or other suitable means. The substances thus collected are then to be treated in any suitable manner to separate the gold or other precious substances from the remaining debris or foreign substances unavoidably collected therewith in my improved apparatus, which is only intended for collecting the matter from which the gold or other precious substance is to be separated.

It will be obvious from the foregoing that the mode of construction of my improved apparatus may be greatly varied without changing the mode of operation, which distinguishes it from other things before known, and therefore I wish it to be distinctly understood that I do not limit myself to the special mode of construction, but claim the right to vary the construction so long as the same end is attained by equivalent means.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Collecting the matter containing gold and other precious substances in the beds of rivers,

ravines, gulches, &c., carried along by the force of the stream, by placing in the bottom of such stream a box or other vessel with a perforated plate at top and an inclined bottom discharging into a receiving-trunk or equivalent therefor, substantially as described, so that the particles that pass through the holes in being washed over with the débris by the force of the stream will gradually descend on the inclined bottom and be discharged into the trunk, while the lighter substances floating will escape through the holes in the top plate, as set forth.

2. Making the holes in the top plate of such an apparatus larger toward the rear end, as described, in combination with the compartments formed by the inclined partition dividing the inside into compartments with inclined bottoms leading to the trunk, substantially as described.

3. In combination with an apparatus substantially such as specified, the employment of a top screen composed of bars, substantially as specified, to protect the perforated plate from the injurious action of large masses pass-

ing over it and to aid in keeping the holes in the said perforated plate from being clogged, as set forth.

4. The pocket at the lower end of the apparatus, in which are collected the precious substances that pass over the perforations in the top plate, when this is combined with the said perforated plate, and the compartments and trunk below it, substantially as specified, and for the purpose set forth.

5. The vertical trunk or equivalent receptacle, substantially as specified, and with or without an elevator, in combination with the horizontal trunk and the compartments below the perforated plate, substantially as specified, whereby the substances collected in the apparatus can be withdrawn therefrom without removing the apparatus from its location, as set forth.

JAMES PERRY.

Witnesses:

WM. H. BISHOP,
ANDREW DE LACY.