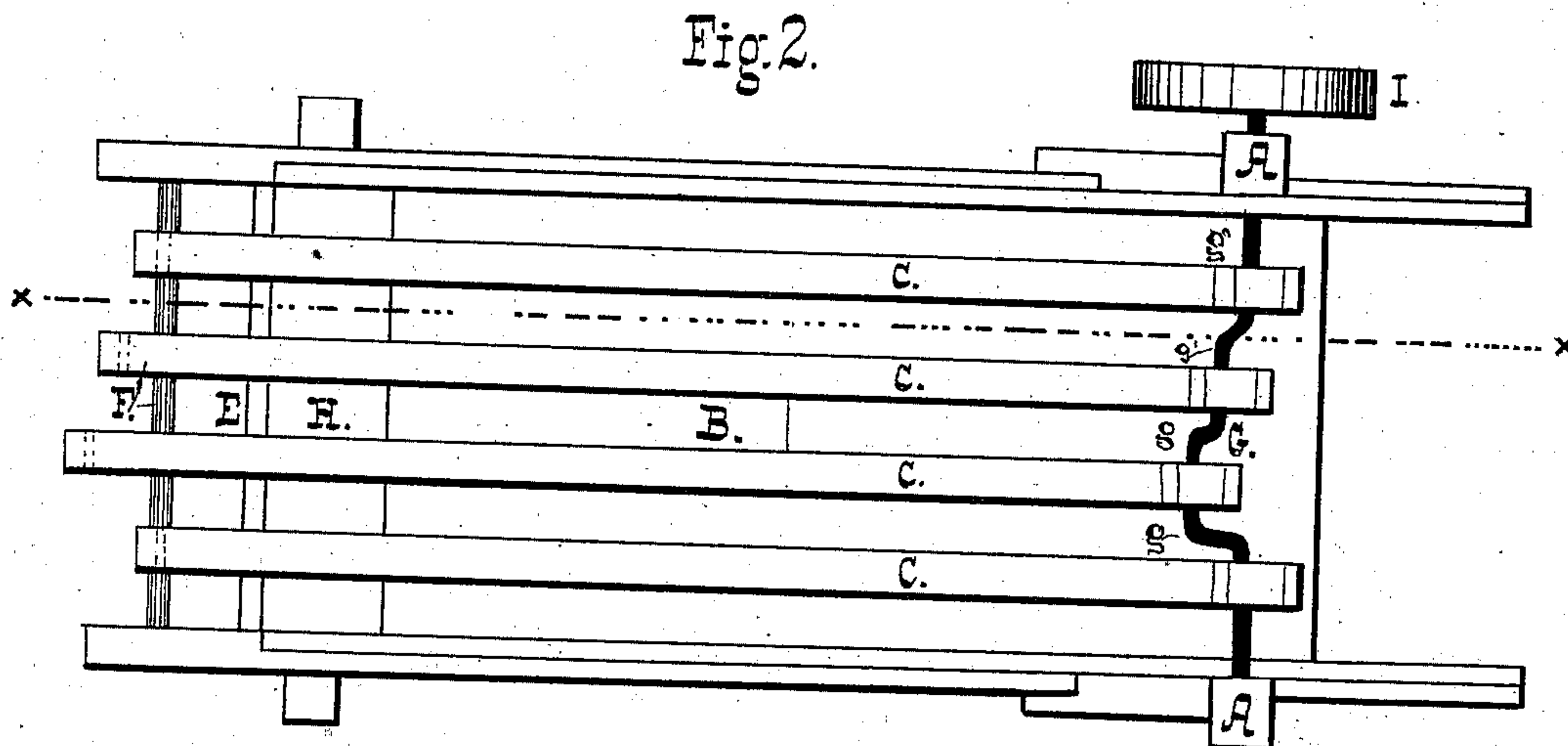
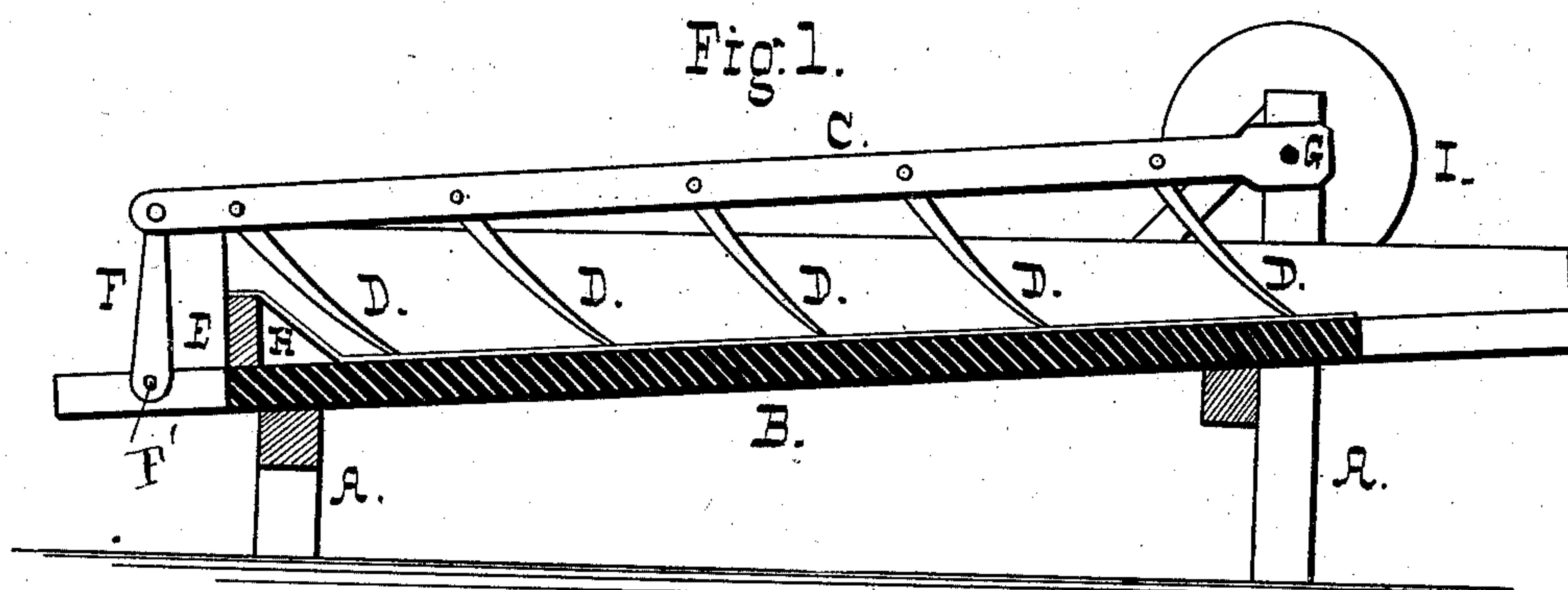


T. B. McCONAUGHEY.
Ore-Washer.

No. 214,783.

Patented April 29, 1879.



Witnesses,
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UNITED STATES PATENT OFFICE.

THOMAS B. McCONAUGHEY, OF NEWARK, DELAWARE.

IMPROVEMENT IN ORE-WASHERS.

Specification forming part of Letters Patent No. **214,783**, dated April 29, 1879; application filed August 27, 1878.

To all whom it may concern:

Be it known that I, THOMAS B. McCONAUGHEY, of Newark, New Castle county, State of Delaware, have invented certain new and useful Improvements in Ore-Washers; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view of the device on line *x x* of Fig. 2, and Fig. 2 is a plan view of the machine.

My present invention consists in an improvement upon that forming the subject of Letters Patent No. 161,697, granted to me April 6, 1875; and in order that it may be clearly understood without referring to the said Letters Patent, the following is given as a brief description of the construction and operation of the patented device. It consists of a stationary inclined trough, having a dam at its lower end and a shaking-screen at its upper one. Beyond the screen an endless apron is suitably mounted upon rollers. Above the trough are suspended a series of bars lengthwise of the same, from which bars a number of shovels depend, being of a length to admit of their unattached ends resting upon the bottom of the trough. Mechanism is provided for swinging the bars referred to, for agitating the screen, and for moving the apron. The ore to be treated is delivered upon the lower portion of the trough, through which a stream of water is at the same time allowed to flow from above, carrying the lighter portions of the ore down the trough and over the dam. The heavier portions are moved by means of the reciprocating shovels up the trough, against the stream of water, and finally fall upon the screen. There the ore is graded as to size, the large pieces being shaken from the screen upon the apron, the finer portions falling through the screen and into a convenient receptacle.

Inasmuch as my present invention relates to but a single feature of the above-described device, I have considered it necessary only to illustrate so much of the machine as embodies the said invention, the accompanying drawings illustrating only the stationary inclined

trough with its longitudinal bars and pivoted shovels.

In my patented machine these bars are suspended by links from a frame-work over the trough, and reciprocate in lines which are practically parallel to the bottom of the trough. The angle of inclination of the shovels is therefore nearly, if not quite, constant, and, as a consequence, the mass of ore is, as it were, pushed bodily up the trough.

My present invention consists in attaching the shovels to bars pivoted at one end upon a crank-shaft and supported at the other by vertical arms, whereby the mass of ore is turned over and fresh portions of it exposed to the current of water.

In the accompanying drawings, A represents a suitable frame, upon which is mounted a trough, B, inclined as shown, and having at its lower end a dam, E. A metallic lining, H, covers the interior of the trough. Upon a cross-rod, F', at the lower end of the trough are mounted the arms F, which sustain the ends of the shovel-bars C. To these are pivoted a series of shovels, D, in the manner shown, their unattached ends pointing up the trough and resting upon its bottom. Between uprights at the upper end of the trough extends a shaft, G, upon which is formed, or to which are attached, a series of cranks, *g g*, to which the upper ends of the bars C C are secured. These cranks project in different directions from the axis of the shaft, so that no two contiguous shovel-bars complete their stroke simultaneously. Upon the shaft G is mounted a pulley, I, for the driving-belt.

It will be observed that when the shaft G is caused to revolve one end of each of the shovel-bars reciprocates in the arc of a circle whose radius is the arm F, while the other has a continuous circular motion, in consequence of which the upper or attached ends of the shovels are lifted at or about the end of their stroke. The ore is thereby agitated as well as pushed up the trough, and the natural result is a far more complete and effectual separation of the lighter from the heavier portions of the ore than was possible with the machine upon which the present one is an improvement.

It will be observed, moreover, that this agitation of the ore is greatest near the upper part of the trough, where the current of water is strongest, and where the ore is about to escape from its influence.

Besides these advantages, the present machine is far simpler in construction than the patented device hereinbefore referred to, as it dispenses with parts which were cumbrous and unnecessary, and obstructed access to the side of the trough.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

In combination with the trough B, the bars C, having shovels D, the said bars being supported at one end upon arms F, and directly attached at the other to the crank-shaft G, as set forth.

THOS. B. McCONAUGHEY.

Witnesses:

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