

T. H. O'BRIEN.
COAL WASHING JIGGER.
APPLICATION FILED NOV. 22, 1909.

987,642.

Patented Mar. 21, 1911.

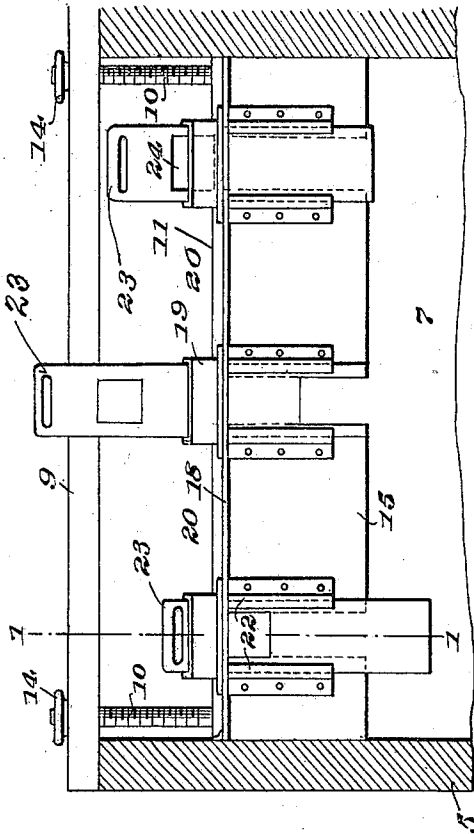


Fig. 2.

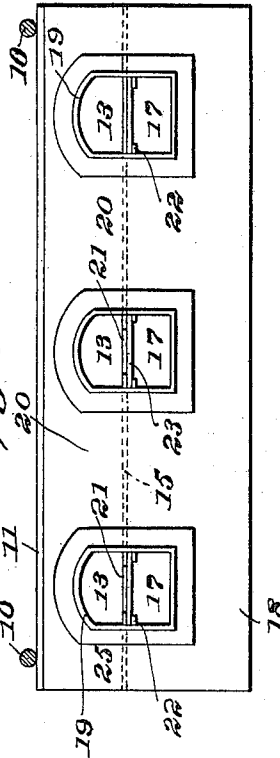


Fig. 3.

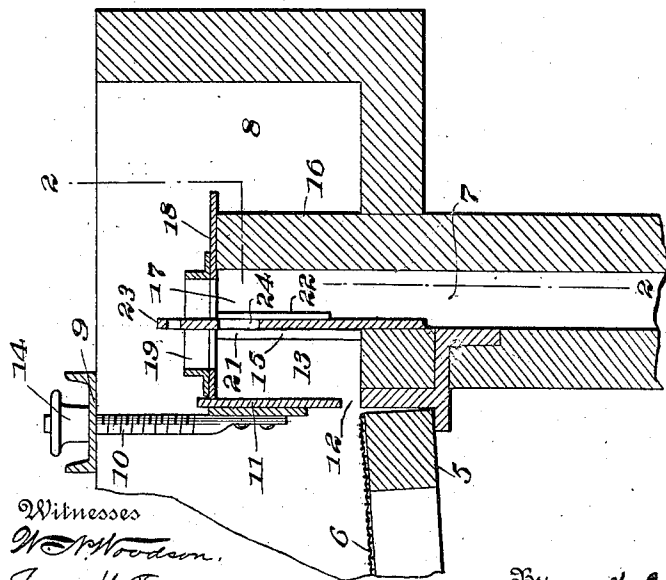


Fig. 1

Witnesses
W. H. Woodson,
James M. Fallon,

By

T. H. O'Brien, Inventor
W. H. Woodson, Attorney

UNITED STATES PATENT OFFICE.

THOMAS H. O'BRIEN, OF DAWSON, TERRITORY OF NEW MEXICO.

COAL-WASHING JIGGER.

987,642.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed November 22, 1909. Serial No. 529,360.

To all whom it may concern:

Be it known that I, THOMAS H. O'BRIEN, a citizen of the United States, residing at Dawson, in the county of Colfax and Territory of New Mexico, have invented certain new and useful Improvements in Coal-Washing Jiggers, of which the following is a specification.

This invention relates to jigs of the plunger type employing a fixed screen, and more particularly to improved means for discharging the heavier material during the process of jigging.

The object of the invention is to provide a jig, in which the finer part of the heavier material will fall through the fixed screen into a suitable receptacle, while, by means of the pulsation of the water, due to the reciprocating plungers, the coarser heavier material will be carried through compartments in the tail plate, and then through gates in said compartments to a suitable receptacle, thus keeping the coarser heavier material separated from the lighter material which is being constantly discharged over the tail plate.

A further object is to so construct the sliding gates of the tail plate compartments that better control may be had over the discharge of the heavier material, which will increase the efficiency of the jigging process, and further to construct these gates in such a manner as to enable said gates to clear the top of the screen when raised to their highest point and hence to provide means for cleaning the screen whenever it may be deemed necessary.

A further object is to provide a dam in front of the tail plate compartments in order to regulate the passage of the heavier material into the same.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following de-

scription and accompanying drawings, in which:

Figure 1 is a vertical sectional view of the front part of a coal jig constructed in accordance with my invention, the view being taken on the line 1—1 of Fig. 2; Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1, one of the gates being shown in elevated position to permit the passage of coarser material from the screen to the discharge spout. Fig. 3 is a top plan view of Fig. 1, the frame and transverse bar being omitted.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device forming the subject matter of the present invention is principally designed for use in connection with jigs of the plunger type employing a fixed screen, and by way of illustration is shown applied to such a jig in which 5 designates the body of the jig, 6 the stationary screen, 7 the discharge spout, and 8 the trough.

Extending transversely across the front of the jig and secured in any suitable manner to the side walls thereof, is a channel bar 9 having openings formed therein for the reception of depending threaded rods 10, the lower ends of which are flattened and riveted or otherwise rigidly secured to a transversely disposed dam or partition 11. The lower longitudinal edge of the dam or partition 11 is normally spaced from the screen 6 to form a passage 12 communicating with a compartment 13, said dam or partition being adjustable vertically in order to govern the admission of the coarser heavier material in said compartment, this adjustment being effected by means of the nuts 14.

Extending transversely across the front of the jig in spaced relation to the movable partition or dam 11, is a stationary partition 15, the latter being spaced from the extension 16 of the discharge spout 7 to form a compartment 17 opposite the compartment 13. Mounted on the extension 16 of the spout is a tail plate 18 which extends across the compartments 13 and 17 and is provided with a series of openings communicating with said compartments, as best shown in Figs. 1 and 3 of the drawings. The openings in the tail plate 18 are surrounded by flanges 19 of a suitable height to prevent the splashing of water and the coarser

heavier material into the lighter material which is constantly flowing over the tail plate in the spaces 20 between said flanges. The stationary partition 15 is formed with a series of openings 21 which form a source of communication between the compartments 13 and 17 and through which the heavier coarser material drops by gravity into the discharge spout 7.

10 Secured to the outer face of the stationary partition 15 are oppositely disposed guide flanges 22 in which are slidably mounted for vertical movement suitable gates or closures 23 having openings 24 formed therein and adapted to register with the openings 21 for controlling the flow of material through the latter to the discharge spout. Thus it will be seen that by raising and lowering the gates 23 in the guides 22, the point of discharge of the refuse will be raised or lowered as the operation of the jig may demand. It will also be seen that when the gates 23 are raised to the limit of their upward movement, the bottom of the gates will clear the bottom of the jig, and thus permit a free passage of the coarser heavier material from the screen 6 to the spout 7, which latter conveys this material to a suitable receptacle, as before stated. Thus it will be seen that in the process of jiggling, the finer heavier particles will pass through the screen 6 into a suitable receptacle, while the coarser heavier material will be carried through the passage 12 and then, being forced upwardly by the pulsation of the water, will be carried through the discharge openings 21 whence it will fall by gravity through the spout 7 into a suitable receptacle, the lighter material at the same time being carried over the tail plate in the intermediate spaces 20 to the trough 8 and thence into a suitable receptacle.

The pulsation of the water, due to the reciprocation of the plungers, serves to carry the water and coarser heavier material upwardly within the compartment 13 and thence through the openings in the partition 15 and gates 23 so that the discharge of the heavier material is at the front of the jig.

The discharge of both the heavier and lighter material in front of the jig where both may be inspected at the same time, will materially increase the efficiency of the device and the results obtained from the jiggling process.

Having thus described the invention, what is claimed as new is:

1. A coal jig having a fixed screen and provided with a discharge spout extending upwardly through the bottom thereof and defining a receiving trough, a vertically adjustable dam extending across the front of the jig, a fixed partition disposed in advance of the dam and spaced from the adjacent

wall of the spout to form a plurality of compartments, a horizontally disposed tail-plate resting on the upper ends of the spout and fixed partition respectively, said tail-plate forming a closure for the upper portions of the compartments and having a series of openings formed therein and communicating with both compartments, there being openings formed in the fixed partition and opening through the lower edge thereof, said openings forming a source of communication between the compartments and the discharge spout, and gates slidably mounted on the fixed partition and operating within the discharge spout for controlling the flow of material through the openings therein into said discharge spout.

2. A coal jig having a fixed screen and provided with a discharge spout extending upwardly within the body of the jig, a fixed partition, a horizontal tail-plate resting on the upper edges of the fixed partition and discharge spout respectively, and having a series of spaced openings formed therein, a vertically adjustable dam bearing against one longitudinal edge of the tail-plate and having its lower longitudinal edge spaced from the screen to form a passage, the fixed partition being spaced from the discharge spout and disposed in advance of the dam to form a plurality of compartments communicating with each other and with the discharge spout, said fixed partition having spaced openings formed therein and opening through the lower longitudinal edge thereof, and vertically adjustable gates slidably mounted in the openings in the partition with their lower ends extended within the discharge spout for regulating the flow of material through said compartments into the discharge spout.

3. A coal jig having a discharge spout extending upwardly within the body thereof and provided with a fixed screen, a vertically adjustable dam having its lower end spaced from the screen to form a passage, a fixed partition spaced from the discharge spout and arranged in advance of the dam to form communicating compartments, said fixed partition being provided with spaced openings extending the entire height thereof, a horizontal tail-plate resting on the fixed partition and upper edge of the discharge spout and having openings formed therein communicating with both compartments, and gates mounted for vertical movement within the discharge spout and adapted to close or partially close the openings in the fixed partition, thereby to control the passage of material from said compartments into the discharge spout.

4. A coal jig having a discharge spout extending upwardly through the body thereof and provided with a fixed screen, a vertically adjustable dam having its lower edge

spaced from the screen to form a passage, a fixed partition having spaced openings formed therein and extending the entire height thereof, said partition being spaced
 5 from the dam and discharge spout to form a plurality of compartments, a tail-plate resting on the upper edges of the fixed partition and discharge spout and forming a closure for the upper ends of both compartments,
 10 said tail-plate being provided with spaced openings communicating with said compartments, flanges projecting vertically above the tail-plate and surrounding the openings therein, and vertically movable gates extending through the openings in the tail-plate and operating within the discharge
 15 spout, said gates being adapted to close or partially close the openings in the fixed partition thereby to control the discharge of
 20 material through the openings in said fixed partition into the discharge spout.

5. A coal jig having a discharge spout and provided with a fixed screen, a bar extending across the front of the jig and provided
 25 with openings, depending rods passing through said openings, a dam secured to the rods and having its lower edge spaced from the screen to form a passage, a fixed partition defining a plurality of compartments,
 30 there being openings formed in the fixed partition and forming a source of communication between said compartments and the discharge spout, a horizontal tail-plate resting on the upper edge of the fixed partition
 35 and forming a closure for both compartments, said tail-plate having openings therein and communicating with both compartments, guide flanges secured to the fixed partition, gates slidably mounted between
 40 the guide flanges at the openings in the tail-plate and provided with openings adapted to register with the openings in the fixed partition for controlling the discharge of material from the compartments into the
 45 discharge spout, and means engaging the ends of the rods and bearing against the bar for effecting the adjustment of the dam.

6. A coal jig having a fixed screen and provided with a discharge spout extending
 50 upwardly within the body of the jig, a vertically adjustable dam having its lower edge normally spaced from the screen to form a passage, a fixed partition spaced from the dam and projecting end of the discharge
 55 spout to produce a plurality of compart-

ments and having an opening therein extending the entire height thereof and forming a source of communication between said compartments and the discharge spout, guide flanges disposed on opposite sides of
 60 the openings in the fixed partition, a horizontal tail-plate bearing against one side of the dam and resting on the upper edges of the fixed partition and discharge spout respectively, said tail-plate forming a closure
 65 for the compartment and having an opening therein communicating with the compartment, and a gate operating within the discharge spout and slidably mounted in the flanges on the fixed partition and having an
 70 opening therein adapted to register with the opening in the fixed partition for controlling the flow of material from the compartment to the spout, said gate being movable vertically to inoperative position with its
 75 lower edge spaced from the bottom of the fixed partition thereby to permit the material on the screen to be discharged directly into said spout.

7. In a coal jig of the fixed screen type,
 80 a discharge spout projecting upwardly through the body of the jig, a vertically adjustable dam having its lower edge spaced from the screen to form a passage, a fixed partition spaced from the projecting end of
 85 the spout and said dam to form communicating compartments and having spaced openings therein and opening through the bottom of said partition, a horizontal tail-plate resting on the upper edges of the spout
 90 and fixed partition and extending across and communicating with both compartments, said tail-plate being provided with openings communicating with both compartments, vertically movable gates disposed at the
 95 opening in the fixed partition for controlling the discharge material from said compartments into the spout, the pulsation of the water incident to the operation of the machine serving to carry the coarser heavier
 100 material through said compartments and discharge the same into the spout and to force the finer heavier material over the tail-plate into a receptacle at the front of the jig.

In testimony whereof I affix my signature
 105 in presence of two witnesses.

THOMAS H. O'BRIEN. [L.S.]

Witnesses:

THOS. W. LEWIS,
 K. L. HAMILTON.