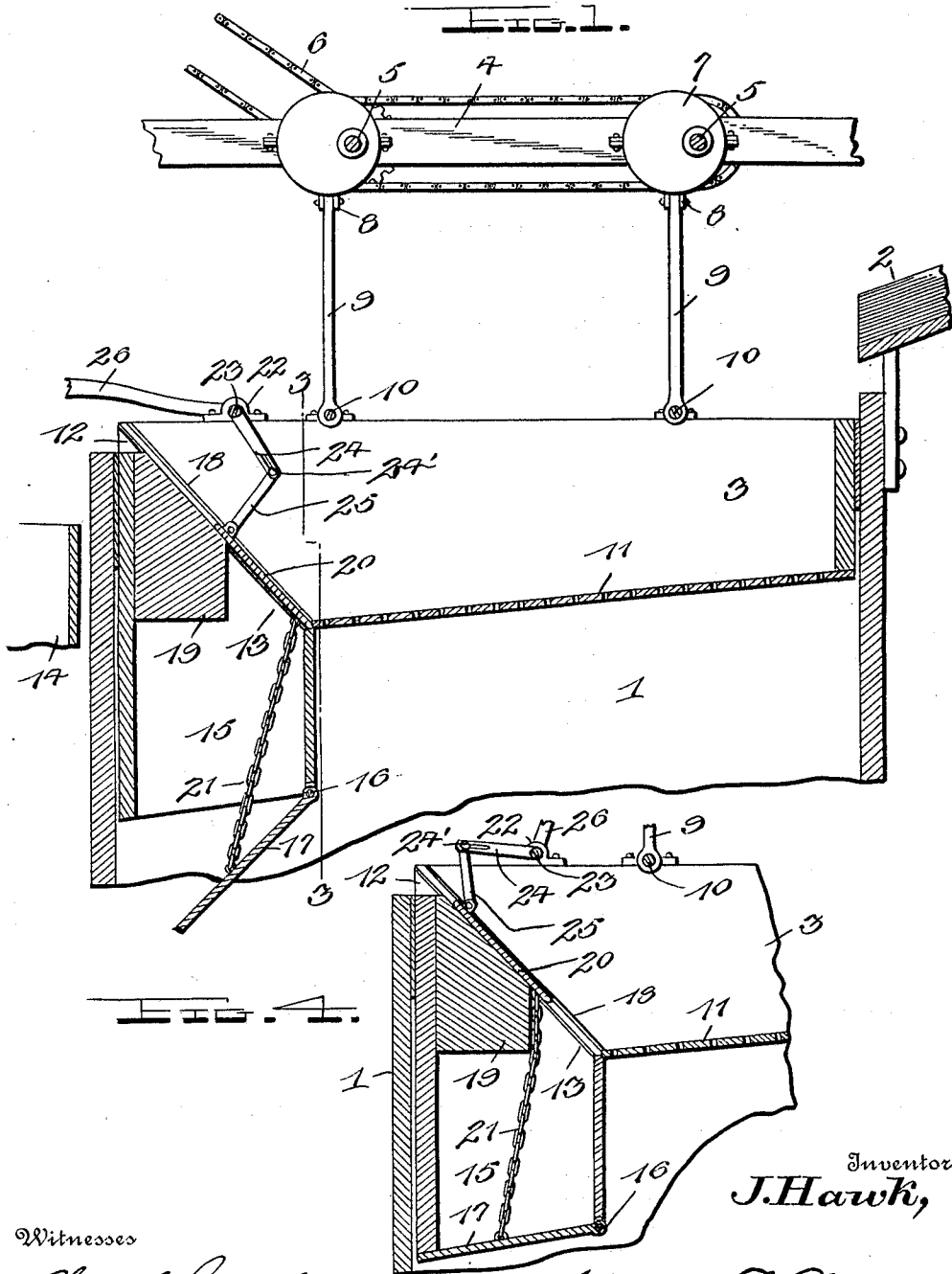


J. HAWK.
VALVE GATE FOR COAL WASHERS.
APPLICATION FILED OCT. 12, 1912.

1,051,809.

Patented Jan. 28, 1913.

2 SHEETS—SHEET 1.



Inventor
J. Hawk,

Witnesses

Chas. L. Griesbauer
A. J. Find.

By

Watson E. Coleman,
Attorney

J. HAWK.
VALVE GATE FOR COAL WASHERS.
APPLICATION FILED OCT. 12, 1912.

1,051,809.

Patented Jan. 28, 1913.
2 SHEETS—SHEET 2.

FIG. 2.

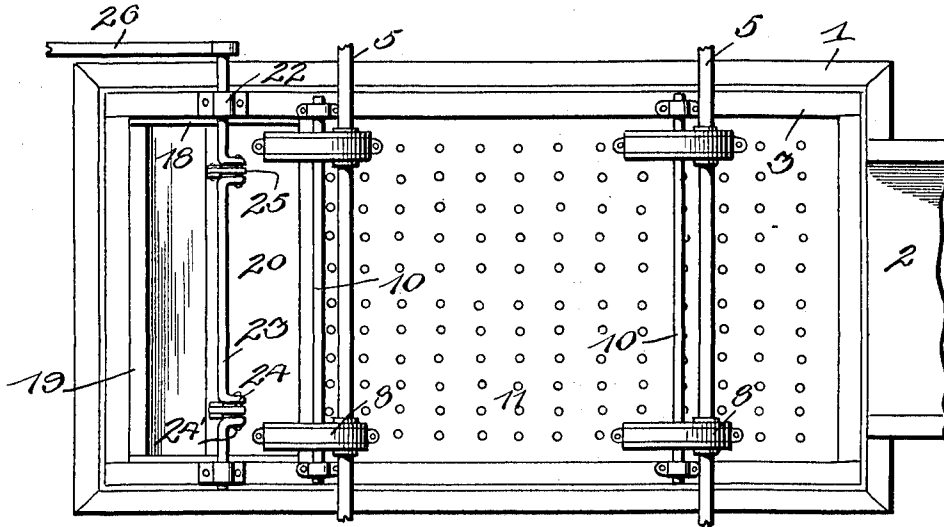
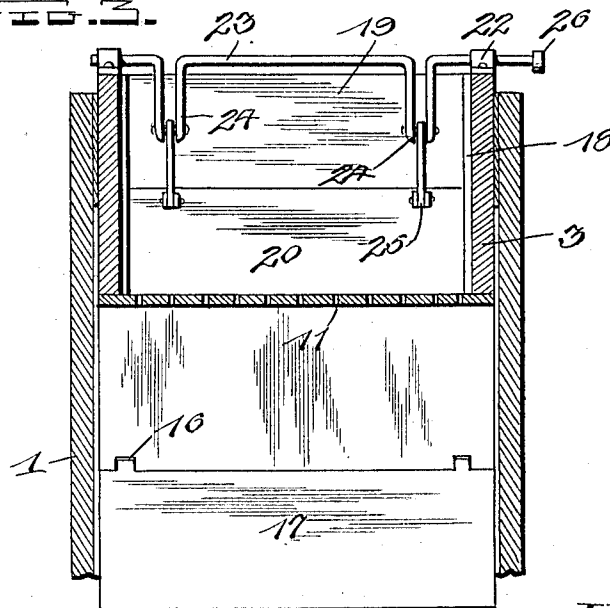


FIG. 3.



Inventor
J. Hawk,

Witnesses

Chas. L. Grisbauer
A. J. Hind.

By

Watson E. Coleman,
Attorney

UNITED STATES PATENT OFFICE.

JACOB HAWK, OF MASON TOWN, PENNSYLVANIA.

VALVE-GATE FOR COAL-WASHERS.

1,051,809.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed October 12, 1912. Serial No. 725,500.

To all whom it may concern:

Be it known that I, JACOB HAWK, a citizen of the United States, residing at Mason-town, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Valve-Gates for Coal-Washers, of which the following is a specification, reference being had to the accompanying drawings.

10 The present invention relates to new and useful improvements in valve gates for coal washers and ore separators, and the primary object of the present invention is to provide in a coal washing apparatus a jig mounted
15 for reciprocatory movement and a deposit chamber carried by said jig so that the particles of material having the greater specific gravity will be jostled together and deposited within the chamber as the jig moves in
20 an upward direction.

A further object of the present invention is to provide a deposit pocket for a device of the class aforesaid which is provided with semi-automatically operated valve gates for
25 closing and opening the entrances to the said deposit chamber.

With the above and other objects in view, this invention consists of the novel details of construction, combination, formation and arrangement of parts as will be hereinafter
30 more fully described, claimed and particularly pointed out in the appended drawings, in which—

Figure 1 is a vertical section through a coal washing machine having my invention as applied thereto, Fig. 2 is a plan view of the same. Fig. 3 is a transverse section
35 taken on the line 3—3 of Fig. 1, and Fig. 4 is a detail section illustrating the operation of the valve gates.

Referring now to the accompanying drawings, the numeral 1 designates the washing tank of the coal washer being provided with a chute 2 leading to the tank to conduct the
45 coal into the jig 3 that coöperates therewith. A support 4 is carried by the frame 1 having journaled therein a pair of spaced rotatable shafts 5 driven by a chain drive 6, as illustrated. Keyed upon the said shafts 5 are eccen-
50 trics 7 provided with the usual eccentric straps 8 having hanger rods 9 depending therefrom which will have a rising and falling motion as the shafts 5 are rotated.

The jig 3 is provided with a pair of trans-
55 versely extending rods 10 to which the hanger rods 9 are connected, thereby provid-

ing means for supporting the jig so that the same will be reciprocated during the reciprocation of the said hanger rods. The jig 3 is provided with a perforated bottom 11, a discharge opening 12 at one end thereof
60 through which the washed coal may be discharged, and an opening 13 formed in the bottom thereof adjacent one end of the jig for the discharge of slate or other impuri-
65 ties.

It will be noted that upon the rotation of the eccentric 7, due to the actuation of the shafts 5 by which they are carried, a continuous vertical reciprocation may be im-
70 parted to the jig 3, due to its connection to the eccentrics through the medium of the eccentric straps, hangers, and transverse rods to which the said hangers are connected. During said reciprocation, the water in the
75 tank 1 of the coal washer, is constantly slushed into the jig 3 through its perforated bottom, thereby washing the coal contained in the jig, permitting the same to discharge through the opening 12 into a suitable re-
80 ceptacle 14, and upon the upward movement of the same, the slate or other impurities will discharge through the opening 13.

The before described apparatus is the ordinary and common construction of a coal
85 washer and ore separator, and the present invention resides in providing a jig of the character aforesaid with an extension or deposit pocket 15 which is formed adjacent one end of the said jig. Hingedly secured
90 to the lower extremity of the pocket 15, as at 16, is a bottom gate 17 and slidably mounted within guide ways 18 formed upon an extension 19 is a top gate 20. This slid-
95 ing gate 20 when in its lowermost position is adapted to close the opening 13 formed within the jig 3, but when the same is opened the slate contained in the jig may be discharged therethrough. The said gates
100 17 and 20 are connected by a pair of chains or similar flexible members 21. To provide means for operating these gates, I mount within bearings 22 carried by the jig, a shaft 23. This shaft is provided with a pair of
105 crank arms 24 which are loosely connected to the sliding gate 20 by means of links 25 and these links 25 are connected to the crank arm by means of a slot and pin connection 24' as shown. An operating lever 26 is also
110 keyed upon the shaft 23 whereby the same may be oscillated manually.

It will be seen that when the lever 26 is

swung upwardly, the sliding gate 20 will be actuated so as to uncover the opening 13 and allow slate or other impurities to discharge into the pocket 15. Since the swinging gate 17 is connected to the sliding gate 20 by means of the chain 21, said first mentioned gate will be closed by an upward movement of the latter and therefore, an uninterrupted passage of material through the pocket 15 is never permitted. When the pocket 15 has become filled with slate or other impurities, or when a desired amount of the same has been discharged therein, the lever 26 is actuated so as to cause the sliding gate 20 to move over the opening 13 whereby the same is closed and the sliding gate 17 is permitted to open.

What I claim is:—

1. In combination with a vertically reciprocating coal washer jig, of a pocket depending therefrom and communicating therewith, a valve controlled opening formed in the lower extremity of said compartment, a valve for controlling the opening between

the said compartment and jig, means for operating the last mentioned valve, and means whereby the first mentioned valve may be closed when the valve is opened, substantially as described.

2. The combination with a vertically reciprocating coal washer jig, of a compartment depending therefrom and communicating therewith, the lower extremity of said compartment having an opening formed therein, a valve for controlling said opening, a sliding valve for controlling the opening between the said jig and compartment, a lever journaled upon said jig, means for operatively connecting said lever with said valve, and means for flexibly connecting said valves, substantially as described.

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

JACOB HAWK.

Witnesses:

FRANK P. COTTOM,
WM. RANKIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."