J. CARROLL.

Emptying Valve for Paper-Pulp Engine.

No. 208,292. Patented Sept. 24, 1878.

Fig. 1.

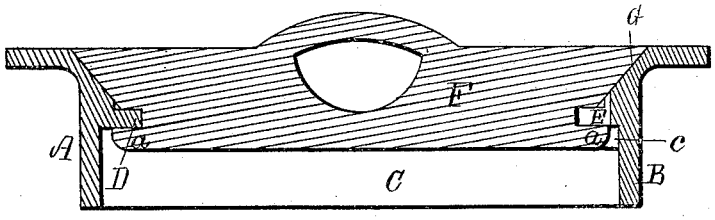


Fig. 2.

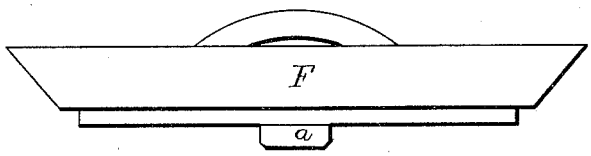


Fig. 3.

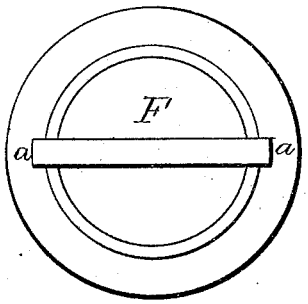
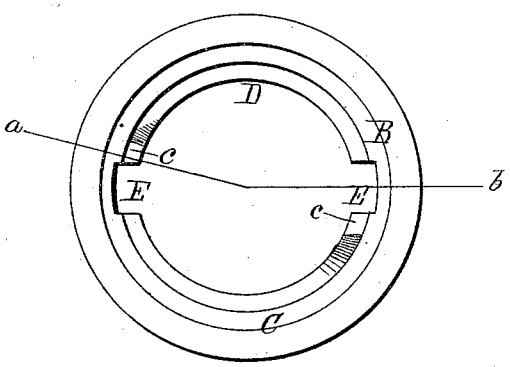


Fig. 4.



Witnesses.

Wm. Turell Andrews Jr

Louis A. Curtis.

Inventor.

Joseph Carroll.

F. Curtis. Atty.

UNITED STATES PATENT OFFICE.

JOSEPH CARROLL, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO GEORGE W. RUSSELL, OF SAME PLACE.

IMPROVEMENT IN EMPTYING-VALVES FOR PAPER-PULP ENGINES.

Specification forming part of Letters Patent No. **208,292**, dated September 24, 1878; application filed August 29, 1878.

To all whom it may concern:

Be it known that I, JOSEPH CARROLL, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Emptying-Valves of Paper-Pulp Engines, of which the following is a specification:

This invention relates to the emptying-valves of paper-pulp engines—that is to say, the drop-valves, which govern the opening in the bottom of the engine through which the stuff is discharged to the stuff-chest below; and my valve is adapted for use in instances where several engines discharge their contents into one common conduit or conductor, which conveys the stuff to the chest.

Heretofore in such instances it frequently resulted that upon opening the valve of one engine, and discharging the contents of such engine into the common conductor below, the outlet of such conductor, unless its descent was very rapid, became choked, and the air, seeking an outlet, worked up into the openings of the other engines and raised the valves, with injurious results well known to paper-makers, and which need not be enumerated in this specification.

My improvement consists in providing the valve and its seat or case with a lock of some suitable construction, whereby when the valve is closed it is prevented from rising until unlocked or released by the engine-tender.

The drawings accompanying this specification represent, in Figure 1, a sectional elevation of an emptying-valve and its seat with my improvement added. Fig. 2 is an edge view, and Fig. 3 an under-side view, of the valve; and Fig. 4 is an under-side view of the valve-case.

In these drawings, A represents the case of the valve, being an annular plate, B, which is let into the bottom of the pulp-engine about the emptying-hole of the latter, and provided with a depending rim, C, to enter and fill said hole. Within the upper part of the rim C, I provide an annular ledge, D, and I create in this ledge two diametrically-opposite notches, E E, while upon the under side of the valve, which is shown at F as filling the valve-seat G, I cast two lugs, *a a*, which project laterally a short distance or to such an extent as to extend under the ledge before named, and by this means prevent the valve from rising on its seat. The lugs *a a* are arranged diametrically opposite each other, to conform to the arrangement of the notches E E, which latter permit the lugs to pass below the ledge.

When an engine is to be emptied of its contents, the tender has recourse to an iron rod with a hook in one end, and, inserting this hook in the eye of the valve, gives the latter a semi-revolution, or thereabout, the lugs being thereby brought opposite the notches and the valve left free to rise. To close the valve it is dropped upon its seat and rotated until the lugs *a a* find and drop through the notch E E, when the tender partially rotates the valve, and the lugs are thereby locked to the ledge D.

I prefer to cast upon the under side of the ledge D two stops, *c c*, against which the lugs bring up when the valve is locked. These stops enable the engine-tender to ascertain when the valve is effectively locked, and they also insure the secure locking of the valve.

I do not restrict myself to the precise means herein described of locking the valve and case together, as shown in the lugs *a a* and ledge D, as it is obvious that very little skill would be required to devise a substitute for such parts. I consider my invention to consist in providing the emptying-valve and case of a pulp-engine with a suitable lock, whereby the valve is kept upon its seat against upward pressure from below.

I claim—

An emptying-valve and seat for paper-pulp engines provided with a suitable locking device, to prevent raising of such valve by pressure from below, substantially as and for purposes stated.

JOSEPH CARROLL. [L. S.]

Witnesses:

J. M. WHEATON,

LOUIS A. CURTIS.