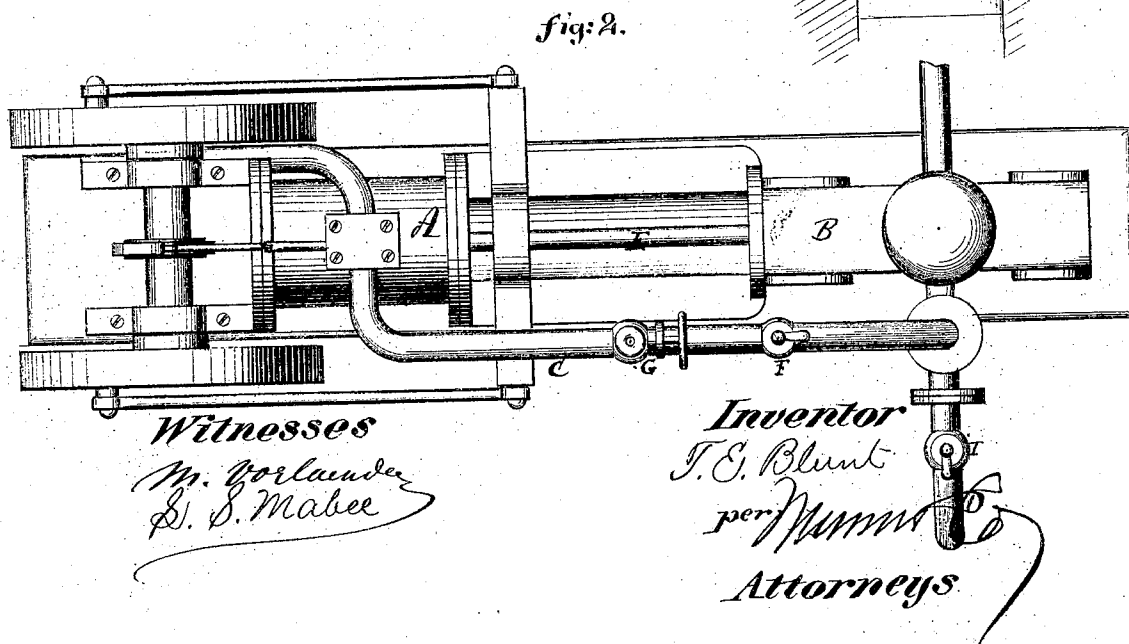
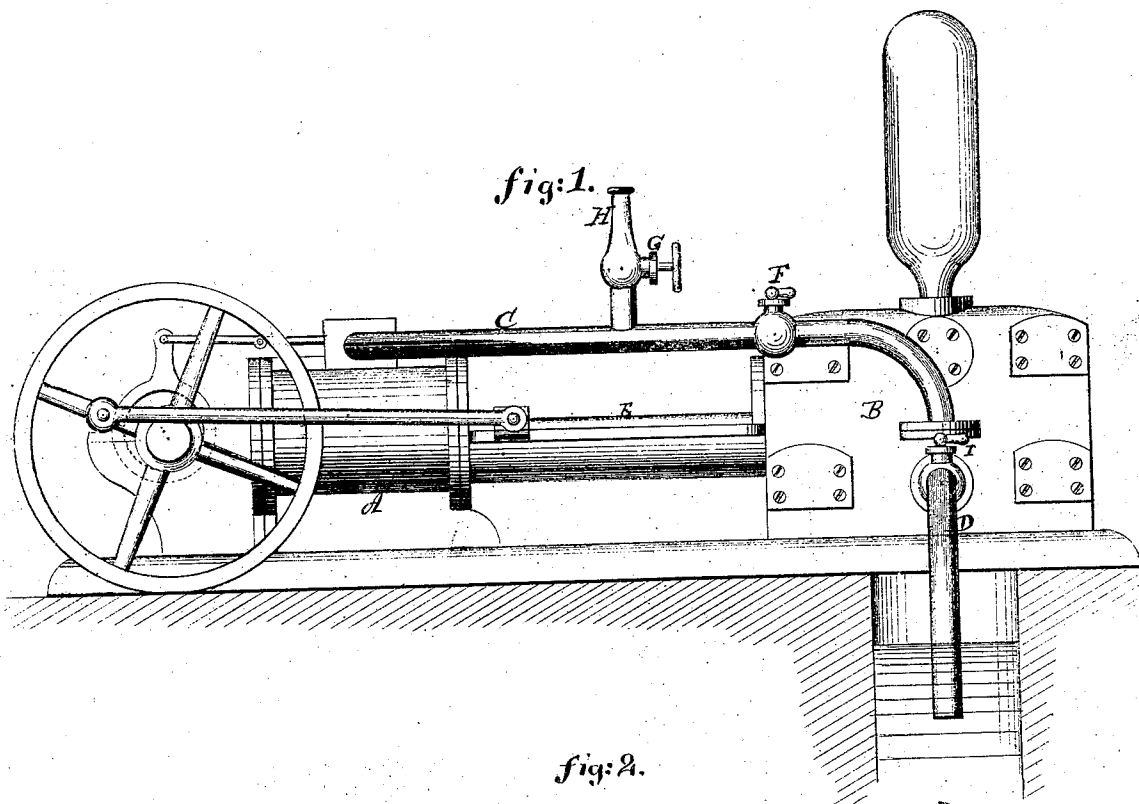


T. E. Blunt,

Direct Acting Engine.

No. 106,312.

Patented Aug 16, 1870.



United States Patent Office.

THOMAS E. BLUNT, OF BROOKFIELD, OHIO.

Letters Patent No. 106,312, dated August 16, 1870.

IMPROVEMENT IN STEAM PUMPING-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, THOMAS E. BLUNT, of Brookfield, in the county of Trumbull and State of Ohio, have invented a new and useful Improvement in Steam Pumping-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention relates to steam-pumps for mines, and consists in the improved method of conveying the steam of the engine to, and condensing it in, the water-discharge pipe.

I will now describe the means which I preferably employ to carry out my invention.

In the accompanying drawing—

Figure 1 represents a side elevation of the pumping-engine.

Figure 2 is a top or plan view.

Similar letters of reference indicate corresponding parts.

A is the steam-cylinder.

B is the pumping-cylinder.

C is the exhaust-steam pipe of the engine.

D is the suction-pipe of the pump.

The pistons of both steam and pumping-cylinder are attached to the same piston-rod E, and the apparatus operates in the ordinary manner, no novelty being claimed for the particular mechanism or application of power.

The novelty consists in disposing of the exhaust steam by exhausting it into the suction or feed-pipe of the pump.

The steam is condensed in the operation.

When it is desired to exhaust the steam in the ordinary manner, or as usual with high-pressure engines, the stop-cock F is closed and the cock G is opened, when the steam will exhaust through the pipe H.

I is a stop-cock in the suction-pipe, to close the pipe when the pump is not in use.

Having thus described my invention,

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

In steam-pumps for mines, the method of discharging the exhaust-steam into the water-discharge pipe, as set forth.

THOMAS E. BLUNT.

Witnesses:

EDWARD SPEAR,

R. A. BALDWIN.