

J. RUSHWORTH.
Steam Hoisting-Machines.

No. 153,118.

Patented July 14, 1874.

Fig. 1.

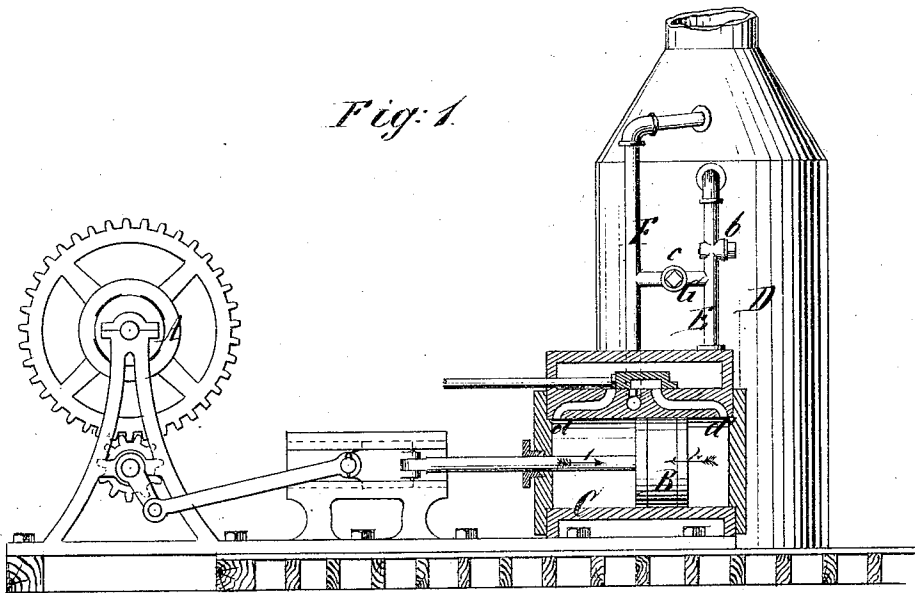
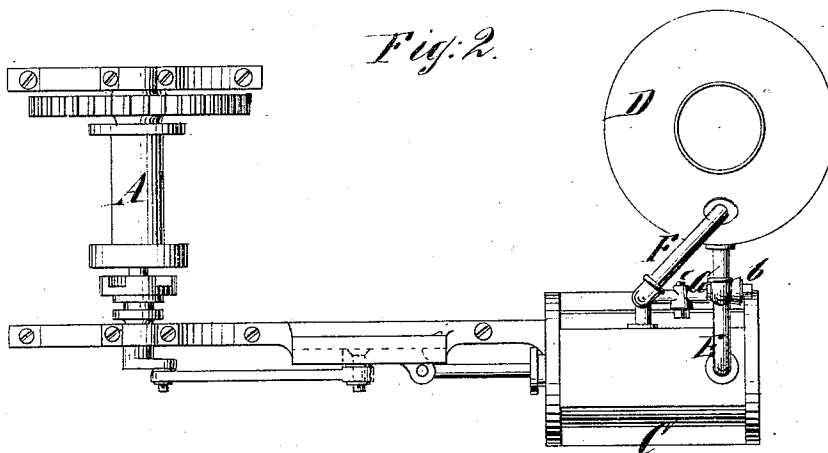


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN STEAM HOISTING-MACHINES.

Specification forming part of Letters Patent No. **153,118**, dated July 14, 1874; application filed January 30, 1874.

To all whom it may concern:

Be it known that I, JOHN RUSHWORTH, of the city, county, and State of New York, have invented a new and Improved Hoisting Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a sectional side view of my invention. Fig. 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of a branch exhaust-pipe, which connects with the steam-supply pipe of a steam-hoister, both the steam-supply pipe and the branch exhaust-pipe being supplied with stop-cocks in such a manner that, when the apparatus is used for lowering goods, or whenever the steam-piston is moved by the action of the load suspended from the hoisting-drum, the compressed air can be allowed to escape from the cylinder through the branch exhaust-pipe with more or less rapidity, and the operation of lowering goods can be conducted with ease and facility.

In the drawing, the letter A designates a hoisting-drum, to which motion is imparted by a steam-piston, B, which is fitted and moves in a cylinder, C. This cylinder is supplied with steam from a generator, D, through a steam-supply pipe, E, and the steam exhausts from the cylinder through the port *a* and the exhaust-pipe F, which may lead into the smoke-chamber of the generator or in the open air. The steam-supply pipe E is provided with a stop-cock, *b*, and an additional exhaust-pipe, G, branches off from that portion of the steam-pipe which is situated between the stop-cock *b* and the steam-chest or steam-cylinder. This branch exhaust-pipe G may lead into the

main exhaust-pipe F, or it may lead directly into the smoke-chamber or into the open atmosphere, and it is provided with a stop-cock, *c*. If the hoisting apparatus is used for raising goods, the stop-cock *b* in the steam-pipe is opened, the stop-cock *c* of the branch exhaust-pipe is closed, and, when steam enters the cylinder through the port *d* and exhausts through the port *d'*, the piston moves in the direction of arrow 1; but, if the steam-cock *b* is closed and the apparatus is used for lowering goods, the piston is driven by the weight of the load, and, when the slide-valve is in the position shown in Fig. 1, the piston moves in the direction of the arrow 2, and consequently, by said piston, air is sucked in through the main exhaust pipe and port *d'*, and the air in front of the piston is forced out through the port *d* into the steam-chest, from which it is permitted to escape with more or less rapidity by opening the stop-cock *c* in the branch exhaust-pipe G. By adjusting the stop-cock *c* the load can be lowered with more or less velocity.

It will be readily understood from this description that in my hoisting apparatus the operation of raising and lowering goods can be governed simply by means of the steam-cock *b* and the stop-cock *c* in the branch exhaust-pipe.

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

In a steam hoisting apparatus, the branch exhaust-pipe G, in combination with the steam-pipe E, exhaust-pipe F, cocks *c* and *b*, cylinder C, and hoisting-drum A, substantially as and for the purpose set forth.

This specification signed by me this 24th day of January, 1874.

JOHN RUSHWORTH.

Witnesses:

W. HAUFF,

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