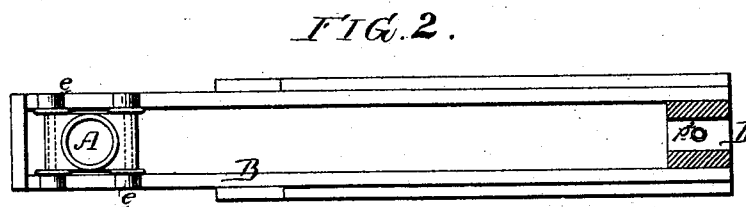
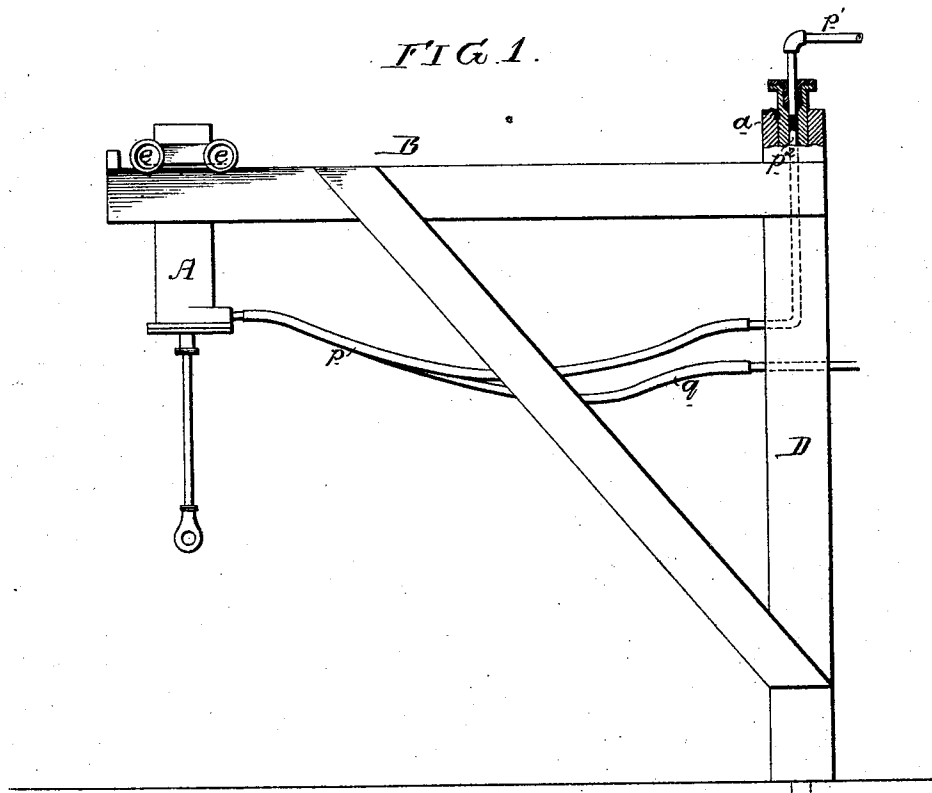


J. L. PENNOCK.
Hydraulic Hoisting-Cranes.

No. 151,910.

Patented June 9, 1874.



Witnesses, Harry Smith
Thomas M. Swan

Joseph L. Pennock
by his attys.
Howson and Sm.

UNITED STATES PATENT OFFICE.

JOSEPH L. PENNOCK, OF COATESVILLE, PENNSYLVANIA.

IMPROVEMENT IN HYDRAULIC HOISTING-CRANES.

Specification forming part of Letters Patent No. **151,910**, dated June 9, 1874; application filed May 25, 1874.

To all whom it may concern:

Be it known that I, JOSEPH L. PENNOCK, of Coatesville, Chester county, Pennsylvania, have invented certain Improvements in Cranes, of which the following is a specification:

My invention relates to an Improvement in the steam-crane for which Letters Patent No. 145,224 were granted to me on the 15th day of October, A. D. 1873; and the object of my invention is to permit a greater sweep of the crane than can be attained by that described in the said patent.

In the accompanying drawing, Figure 1 is a vertical section of a crane with my improvement, and Fig. 2 a plan view of Fig. 1.

A is the hoisting-cylinder, having wheels *e*, adapted to ways on the jib B of the crane, the post D of which is composed, in the present instance, of two vertical pieces, as shown in Fig. 2. The cylinder is provided with a piston and piston-rod, the latter being furnished at its lower end with an eye, to which the hoisting tackle is attached, as in my former patent, and pipes *p* and *q*, for introducing steam to, and exhausting it from, the cylinder, extend from the latter to the post of the crane, the pipes being flexible, so that the cylinder can be traversed to and fro along the jib of the crane by any suitable mechanism without interfering with the free passage of steam.

In my said patent both steam and exhaust pipes were continued beyond the post of the crane, so as to restrict the sweep of the latter—a defect which my present improvement obviates.

It will be seen, on reference to Fig. 1, that the pivot *a* of the crane is hollow, and that the rigid steam-pipe *p'* passes from above into a stuffing-box formed in this pivot, to the lower end of which another rigid pipe, *p''*, is screwed or otherwise secured, and to the latter pipe is connected the flexible steam-pipe *p*.

It will be evident that, by this arrangement, the steam-pipes present no obstacle to the turning of the crane on its pivots to any extent desired.

As regards the exhaust-pipe *q*, I propose to pass it into a stuffing-box in the lower pivot, and thence through underground pipes to the exterior of the building, whenever it is important to thus dispose of the exhaust steam; but in rolling-mills and other localities where cranes of this class are most likely to be used, the exhaust-pipe may be simply so arranged to discharge the steam at a point above the crane.

I claim as my invention—

The combination of a crane having a traversing hoisting-cylinder and flexible steam-pipe *p* with a pivot, through which the steam is directed to said pipe, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH L. PENNOCK.

Witnesses:

WM. A. STEEL,
HARRY SMITH.