W. WRIGHT.

Frames for Horizontal Engines.

No. 144,818. Patented Nov. 18, 1873.

FIG. 1.

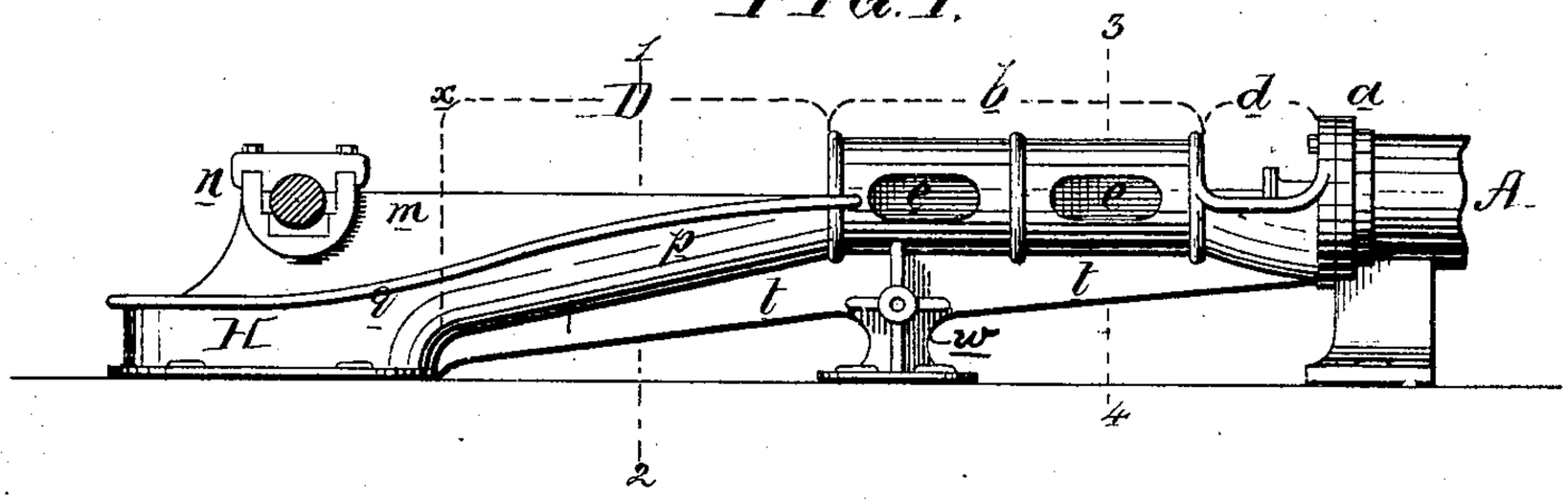


FIG. 2.

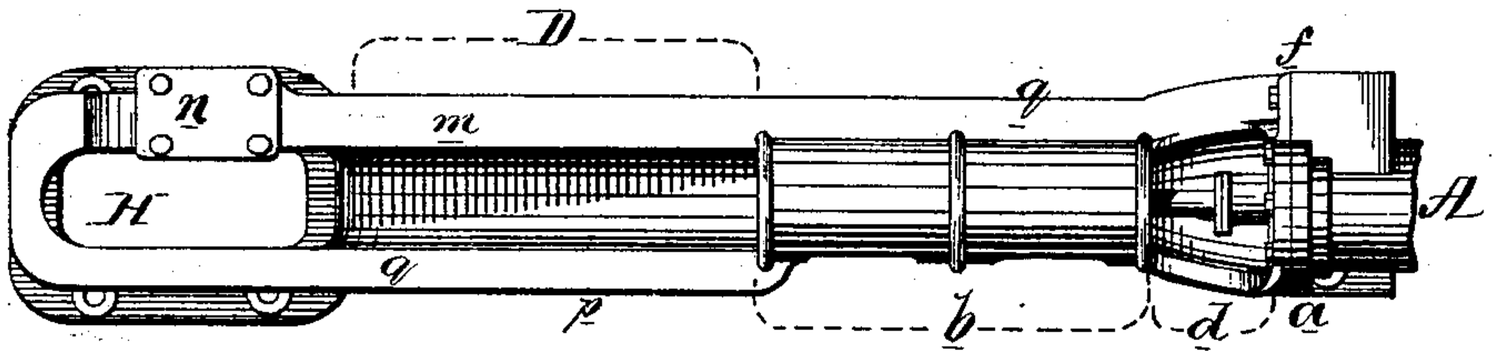


FIG. 3

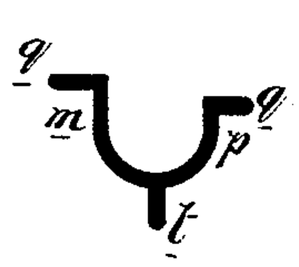
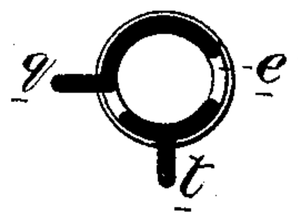


FIG. 4.



Witnesses
George H. Clark.
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UNITED STATES PATENT OFFICE.

WILLIAM WRIGHT, OF NEWBURG, NEW YORK.

IMPROVEMENT IN FRAMES FOR HORIZONTAL ENGINES.

Specification forming part of Letters Patent No. **144,818**, dated November 18, 1873; application filed July 26, 1873.

To all whom it may concern:

Be it known that I, WILLIAM WRIGHT, of Newburg, Orange county, New York, have invented an Improvement in Frames for Horizontal Engines, of which the following is a specification:

The object of my invention is the attainment of both lightness and strength in the construction of frames for horizontal engines, and at the same time to dispense with much of the fitting and other costly work demanded by the ordinary frames of engines of this class.

These objects I attain in the manner shown by the side view, Figure 1, and the plan view, Fig. 2, of the accompanying drawing. The extreme rear end of the frame, and forming part of the same, is the head *a* of the steam-cylinder A, and the portion of the frame which, in ordinary engines, is devoted to the usual flat slides, consists of a hollow cylinder, *b*, arranged concentrically with the steam-cylinder, and serving as a guide for the cross-head, the guiding-cylinder being simply bored out to receive a cross-head, adapted to it in a manner which need not here be explained, as it forms no part of my present invention. There are lateral openings *e e* in this cylindrical guiding portion of the frame, in order that access may be had to the cross-head. (See transverse section, Fig. 4, on the line 3 4.) A semicircular connecting-piece, *d*, merges at one end in the guiding-cylinder *b*, and at the other end in the cylinder-head *a*, thus uniting the two, the open top of the said connecting-piece permitting ready access to be had to the stuffing-box of the cylinder-head.

This combination, in a horizontal engine-frame, of the guiding-cylinder *b*, cylinder-head *a*, and connection *d*, constitutes an especial feature of my invention. The cylinder *b* not only forms the main body of this portion of the frame, but serves at the same time as a cross-head guide, which can be readily prepared for service by the same bar which is used for boring out the cylinder.

It will be readily understood by those familiar with the costly fitting and other preparations demanded by the slides of ordinary horizontal engines that the said combination conduces to simplicity, lightness, strength, and economy in the construction of the frame.

From the front of the guiding-cylinder *b* to the point *x*, where it meets the base H, the frame is made in the form of an inclined cavo-convex trough, D, deep enough to permit the free movement of the connecting-rod, and this trough, the sectional form of which will be observed in the transverse section, Fig. 3, on the line 1 2, has one side, *m*, the upper edge of which is continued in a plane coinciding with the center of the cylinder *b*, from the latter to the enlargement *n*, for receiving the bearing of the crank-shaft, the opposite side *p* of the trough extending from the guiding-cylinder *b*, with a gradually-descending curve to the base H, into the upper portion of which it merges.

The form of the base is too clearly explained by the drawing to need description.

A strengthening-rib, *q*, extends along the upper edge of the side *p* of the trough-like connection D, and is continued along the upper edge of the base H, and also along the upper edge of the side *m* of the trough, and terminates at an extension, *f*, of the cylinder-head *a;* and in order to add vertical strength to the frame a central web, *t*, extends from the base H to the cylinder-head *a*, this web merging into the foot *w*, which serves as one of the supports of the frame.

In horizontal engines there is necessarily an excessive lateral strain on the frame between the cross-head guides and the crank-shaft. This strain is effectually resisted by the comparatively light trough-like portion of the frame between the crank-shaft and guiding-cylinder.

I claim as my invention—

1. A horizontal steam-engine frame in which a cylinder, *b*, for guiding the cross-head, is combined with the cylinder-head *a* and semicircular connecting-piece *d*, substantially in the manner described.

2. The combination, in a horizontal engine-frame, of the guiding-cylinder *b*, base H, and trough-like connection D.

3. A horizontal engine-frame composed of the cylinder-head *a*, guiding-cylinder *b*, connecting-piece *d*, trough D, base H, and web *t*, all combined substantially in the manner described.

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

WM. WRIGHT.

Witnesses:

GEORGE H. CLARK,

JAS. B. B. BRUNDAGE.