W. Golding,

Reciprocating Steam Engine,

No. 48,549, Patented July 4, 1865.

Fig. 3.

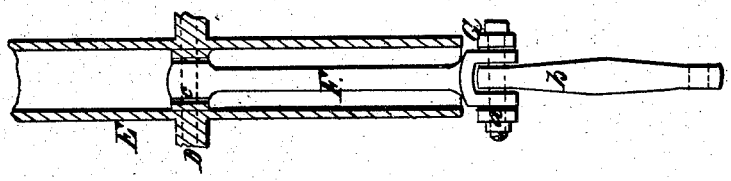
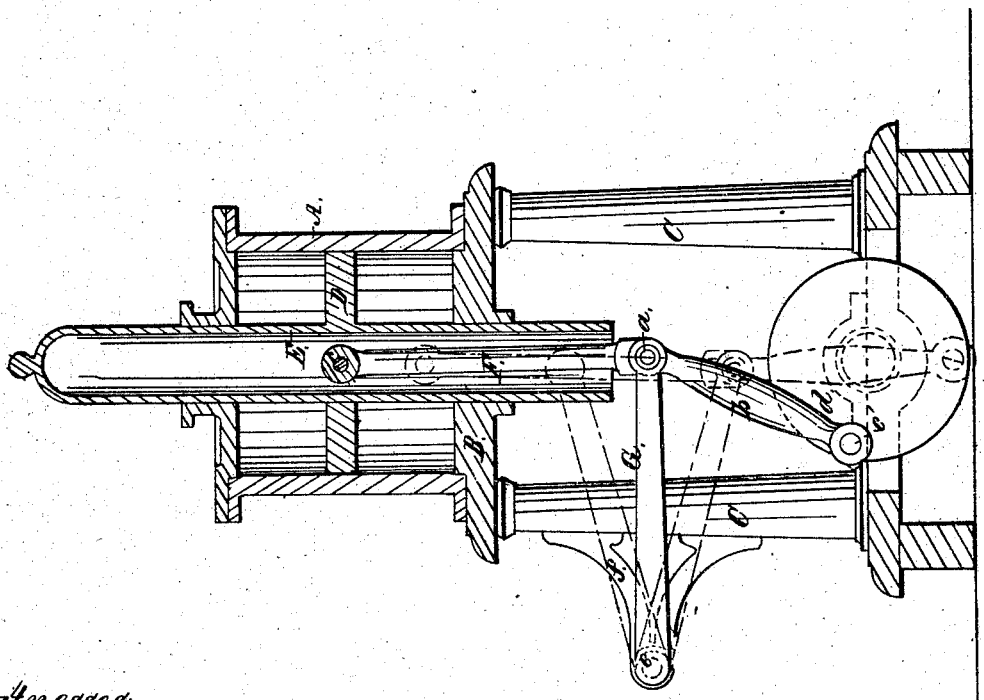


Fig. 1.

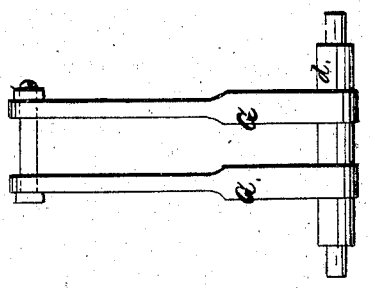


Witnesses:

M. Theaman

J. M. Covington

Fig. 2.



Inventor:

Wm Golding

by Munn & Co

attys

UNITED STATES PATENT OFFICE.

WILLIAM GOLDING, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN STEAM-ENGINES.

Specification forming part of Letters Patent No. **48,549**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, WILLIAM GOLDING, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Trunk-Engine; 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 drawings, forming a part of this specification, in which—

Figure 1 represents a vertical central section of this invention. Fig. 2 is a detached plan of the radius-arm, which is applied to limit the vibrations of the cross-head. Fig. 3 is a detached sectional view of the trunk and its connections.

Similar letters of reference indicate like parts.

This invention consists in the application of a radius-arm, in combination with the connecting-rod, cross-head, and link connecting said cross-head with the trunk of a trunk-engine in such a manner that by the action of said radius-arm the vibration of the link in the trunk is diminished, and the diameter of said trunk can be considerably reduced, and at the same time the trunk is relieved of the friction and the cutting liable from the pressure of the connecting-rod.

A represents an ordinary steam-cylinder, which is supported by the platform B, that rests on columns C, as clearly shown in the drawings, or it may be put up in any other convenient manner.

D is the piston, which is secured to the trunk E, and this trunk extends through both heads of the cylinder, and it connects by a link, F, with the cross-head *a* and connecting-rod *b*. The link F is secured to the trunk by a pivot, *c*, passing through it at about the middle of the thickness of the piston, as clearly shown in Figs. 1 and 3 of the drawings, and its outer end is forked, so that it straddles the end of the connecting-rod, as shown in Fig. 3; or the connection between the link and trunk on one and the link and connecting-rod on the opposite end of said link may be effected in any other desirable manner. The connecting-rod *b* extends from the cross-head to the eccentric wrist-pin *c'*, which is secured in the link or crank *d* in the usual manner; and in order to shorten the vibrations of the cross-head I have applied a radius-arm, G, which is secured to the rock-shaft *e*, that has its bearings in suitable brackets, *f*, on the side or under the platform B. Said radius-arm is either made with a forked end or in two parts, which straddle the forked end of the link F and connect to the cross-head in any desirable manner, and by its action the vibrations of the cross-head are limited to the arc described by the loose end of the radius-arm. The radius-arm sustains the entire lateral pressure of the connection-rod, and the diameter of the trunk can be reduced fully one-half; and, furthermore, said trunk is relieved from all lateral pressure and preserved from the cutting arising from the pressure of the connecting-rod.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The radius-arm G, applied, in combination with the connecting-rod *b*, cross-head *a*, link F, and trunk E, substantially in the manner and for the purpose herein shown and described.

WM. GOLDING.

Witnesses:

J. MCFARLAND,

WM. ERDMAN.