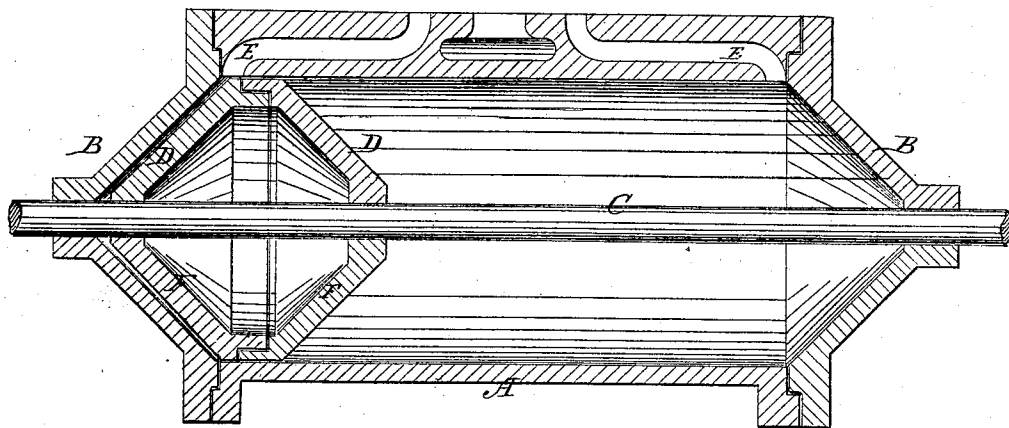


J. R. EICHENBERGER.

Improvement in Reciprocating Steam-Engines.

No. 132,267.

Patented Oct. 15, 1872.



Witnesses:

Chas. Nida
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UNITED STATES PATENT OFFICE.

JOHANN RUDOLF EICHENBERGER, OF BAUGHMAN, OHIO.

IMPROVEMENT IN RECIPROCATING STEAM-ENGINES.

Specification forming part of Letters Patent No. **132,267**, dated October 15, 1872.

To all whom it may concern:

Be it known that I, JOHANN R. EICHENBERGER, of Baughman, in the county of Wayne and State of Ohio, have invented a new and useful Improvement in Steam-Engines, of which the following is a specification:

The object of this invention is to increase the power and efficiency of the steam-engine; and it consists in increasing the steam surface or area of the piston by making it either convex or concave instead of flat, one-third more or less, as may be desired, thus being added.

The accompanying drawing is a longitudinal section of a steam-cylinder provided with my improved piston.

Similar letters of reference indicate corresponding parts.

A is the cylinder. B B are the cylinder-heads. C is the piston-rod. D is the conical piston. E E represent the steam-ports. In this example of my invention the piston is represented as a double convex, the sides F of the piston sloping from the piston-rod to the surface of the cylinder at an angle of about forty-five degrees, but I do not confine myself to any particular angle, nor to a convex steam-surface. The form of the piston shown may be reversed, and the steam-surface of the piston may be concave, as the area of the piston may be increased either way. To make the clearance at the end of the cylinder as small

as possible I make the cylinder-heads to correspond in form to the piston.

In applying my improved piston to old engines new cylinder-heads may be supplied, and the piston-rod may work through a stuffing-box in each head, as seen in the drawing, or through only one, as is usual.

By increasing the steam-surface of the piston in the manner described, it is claimed that the power is increased in the same proportion in any given engine with a given pressure of steam per square inch. This, I am aware, is not in accordance with theory or received opinions, but practice and experience sometimes upset theories and algebraical formulae, and I have found it so in this instance.

I do not confine myself to any particular form or style of piston, so long as the steam-surface or area is increased by making it conical, convex, or concave.

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

The cylinder-heads B B combined with piston D F, each constructed as and for purpose described.

JOHANN RUDOLF EICHENBERGER.

Witnesses:

J. RUDY ROEBUCK,
WILLIAM MORROW.