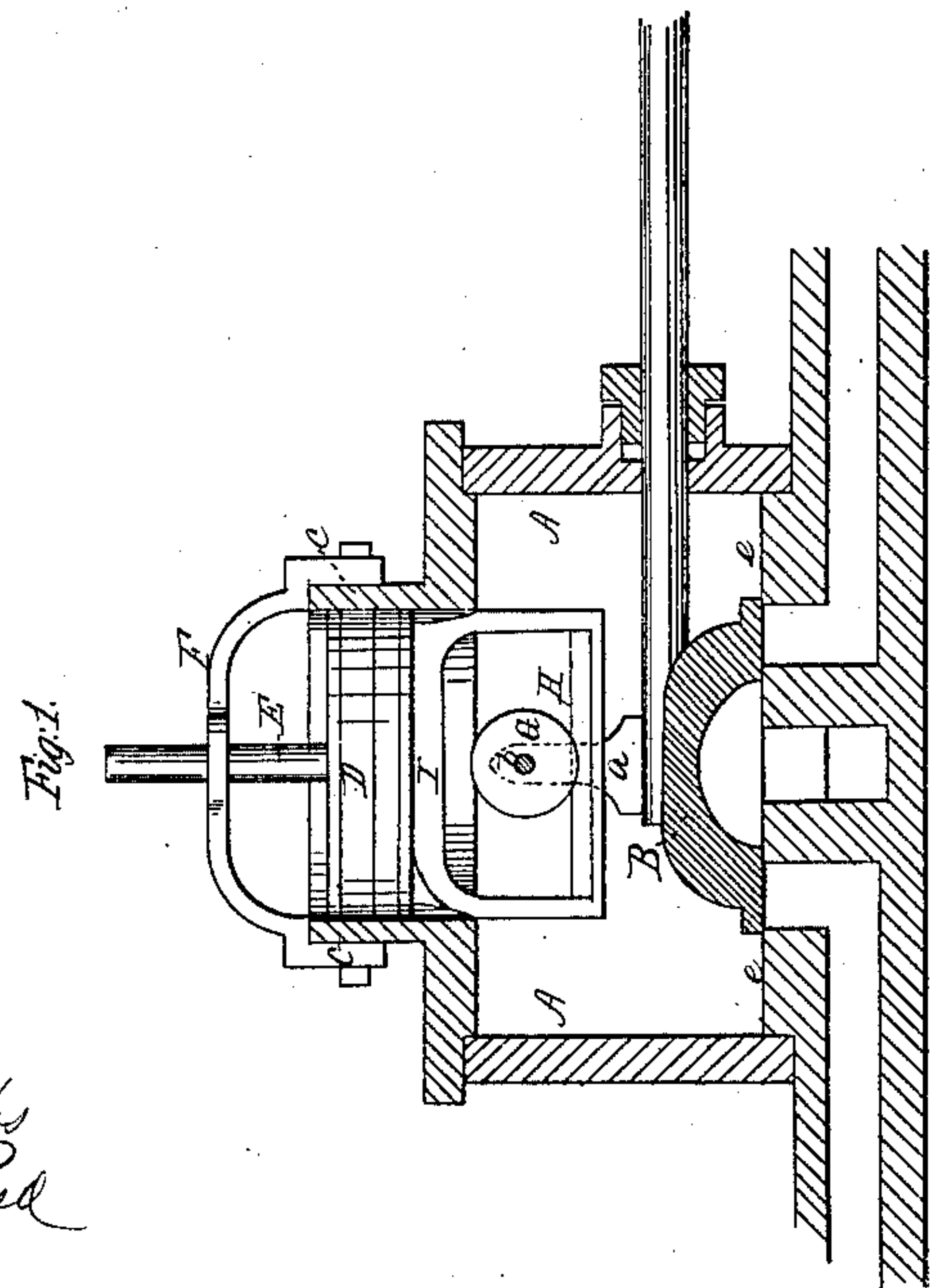
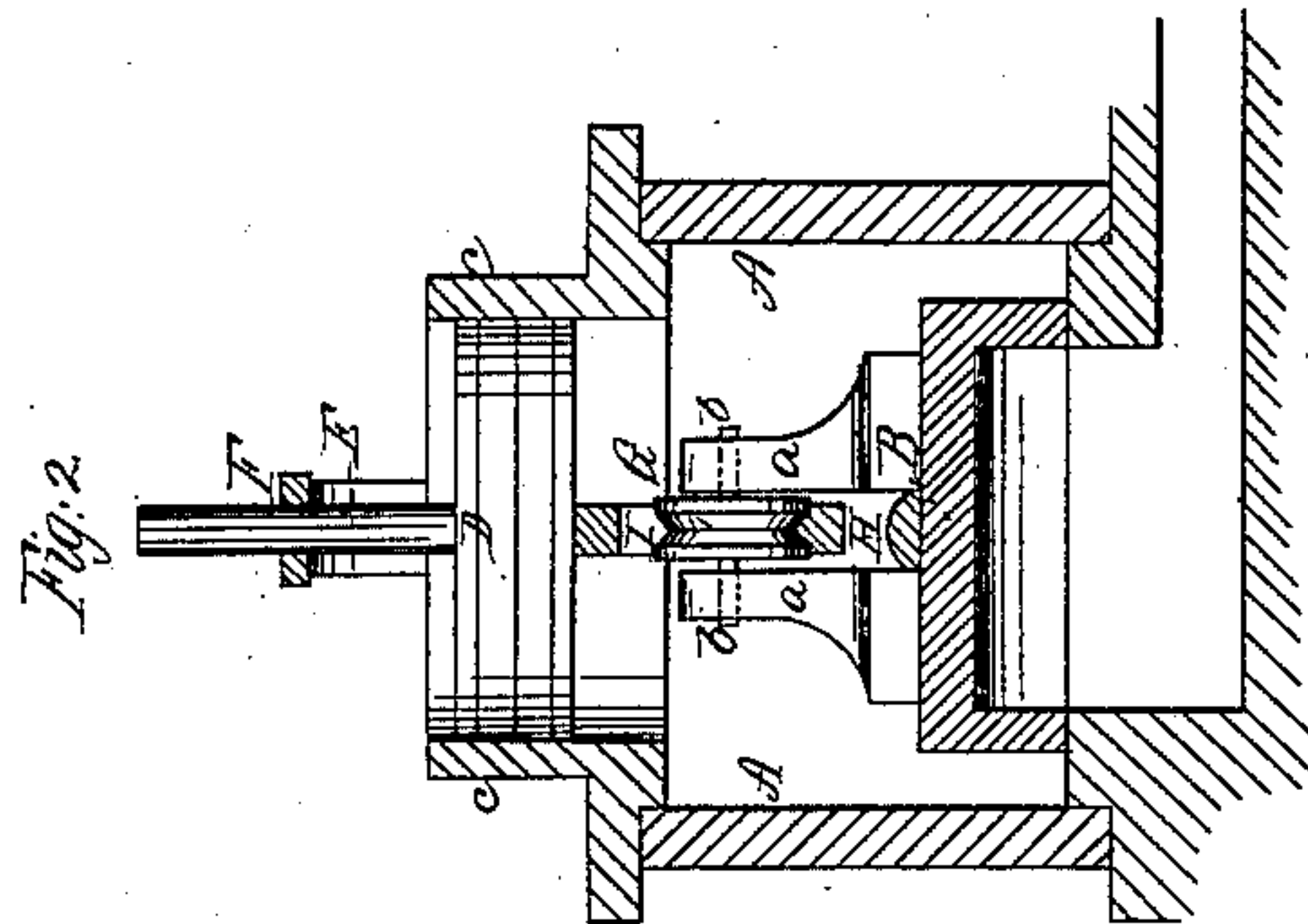


No. 34,259.

PATENTED JAN. 28, 1862.

J. MARTIN.
RELIEVING SLIDE VALVES OF PRESSURE.



Witnesses
J. P. Brown
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UNITED STATES PATENT OFFICE.

JACOB MARTIN, OF MOUND CITY, ILLINOIS.

RELIEVING SLIDE-VALVES OF PRESSURE.

Specification of Letters Patent No. 34,259, dated January 28, 1862.

To all whom it may concern:

Be it known that I, JACOB MARTIN, of Mound City, in the county of Pulaski and State of Illinois, have invented a new and
5 useful Improvement in the Relief of the Slide-Valves of Steam-Engines from Unnecessary Pressure; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had
10 to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a longitudinal section of a valve chest and valve illustrating the application of my invention. Fig. 2, is a transverse section of the same.
15

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to the connection of the slide valve with a piston which is fitted
20 to an open cylinder in the back of the valve chest and upon which the pressure of the steam acts in opposition to its pressure on the back of the valve; and it consists in combining the valve with the piston by
25 means of a roller attached to the valve and a straight bar attached by a yoke to the piston.

To enable others skilled in the art to fully understand and use my invention I will
30 proceed to describe its construction and operation.

A, is the valve chest.

B, is the slide valve of ordinary construction.

35 e, e, is the seat.

C, is the cylinder formed in or attached to the back of the chest A, open at its inner end to the steam chest and its outer end to the atmosphere.

40 D, is the piston fitted to the cylinder C, with metallic packing and having rigidly secured in it a concentric rod E, which works in a guide in a bar F, arranged across

the top of the cylinder and bolted to the sides thereof.

G, is the roller attached to the back of the valve by means of two bearings a, a, which are secured rigidly to the valve and which receive the journals of the axle b, of the roller.

H, is the straight bar upon which the roller runs, secured rigidly to the piston D, by means of the yoke I. The edge or side of this bar upon which the roller runs is parallel with the valve seat. The said edge
55 is represented of V-shape but it may be flat or of any other shape, the periphery of the roller being of a shape to correspond.

The area of the bore of the cylinder C, should bear such proportion to that of the
60 face of the valve, say about seven eighths, that the upward pressure of the steam upon the piston should so far counteract that upon the valve as to leave just sufficient excess of pressure upon the valve to overcome any
65 pressure in the engine cylinder on the exhaust side of its working piston and so prevent the displacement of the valve and consequent leakage.

In the working of the valve the roller
70 runs freely upon the bar H, and so relieves the valve of pressure to the extent due to the pressure upon the piston D, and hence the valve works with very slight friction.

What I claim as my invention and desire
75 to secure by Letters Patent, is;

Combining the slide valve with the piston D, by means of a roller G, attached to the valve, and a bar H, attached to the said piston substantially as and for the purpose
80 herein specified.

JACOB MARTIN.

Witnesses:

JOHN J. FREEMAN,

GEO. E. LOUNSBURY.