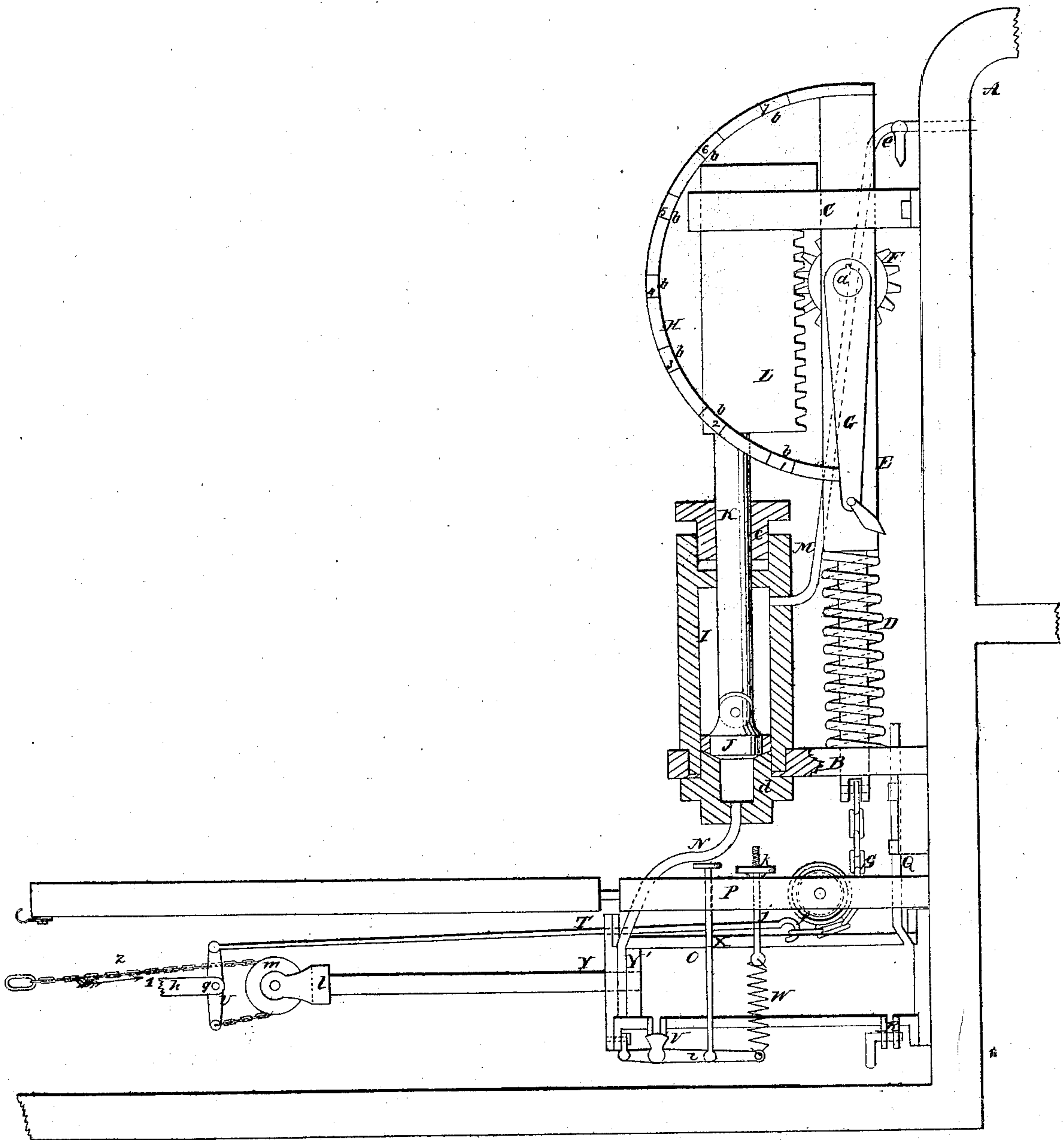


W. Loughridge,
 Applying Steam Power to Car Brakes,
 No 42,385,
 Patented Apr. 19, 1864.



Witnesses
 James D. Hall
 Geo. W. Reed.

Inventor
 Wm. Loughridge.

UNITED STATES PATENT OFFICE.

WILLIAM LOUGHRIDGE, OF WEVERTON, MARYLAND.

IMPROVED METHOD OF APPLYING STEAM-POWER TO CAR-BRAKES.

Specification forming part of Letters Patent No. 42,385, dated April 19, 1864.

CASE B.

To all whom it may concern:

Be it known that I, WILLIAM LOUGHRIDGE, of Weverton, in the county of Washington and State of Maryland, have invented a new and useful Improvement in Applying Steam-Power to Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, said drawing being a side sectional view of my invention.

My invention consists in the employment or use of a steam-chest provided with a valve, a steam-cylinder provided with a piston, and a spring and a valve-regulator, all arranged in connection with a brake-actuating mechanism in such a manner that the brakes may be subjected to any degree of pressure which may be necessary, and the communication between the boiler of the locomotive automatically opened and closed, so as to render the desired pressure constant, whether the same be greater or less.

The invention also consists in the employment or use of an escape-valve applied to the steam-cylinder, and arranged in such a manner as to obviate any sudden increase of tension or pull on the brake chain, a contingency which frequently occurs when the train "stretches," and also to exhaust steam from the cylinder when the brakes are to be relieved.

The invention further consists in a novel means for connecting the piston-rod with the brake chain, whereby a short movement of the former is made to give the necessary length of pull to the latter, and admitting of a short cylinder being used, which is very desirable on account of space being limited where it is most desirable to place the cylinder.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a portion of the boiler of a locomotive, and B is a knee which is securely fastened to the boiler in front of the place where the engineer stands. C is a guide, which is also secured to the boiler some distance

from B. D is a spiral spring which

is connected to the knee B, and E is a sliding bar,

the upper part of which is of cylindrical form

and passes through the spring D and knee B, the upper part of said bar being square in its transverse section and passing through the guide C, the square portion of the bar E preventing it from turning.

F is a toothed wheel which is fitted in a suitable opening in the upper part of the sliding bar E, the axis *a* of the said wheel having a lever or handle, G, secured to it, as shown clearly in the drawing; and H is a semicircular bar which is attached to the sliding bar E, and provided with notches *b*, in any one of which the lever or handle G may be fitted and secured.

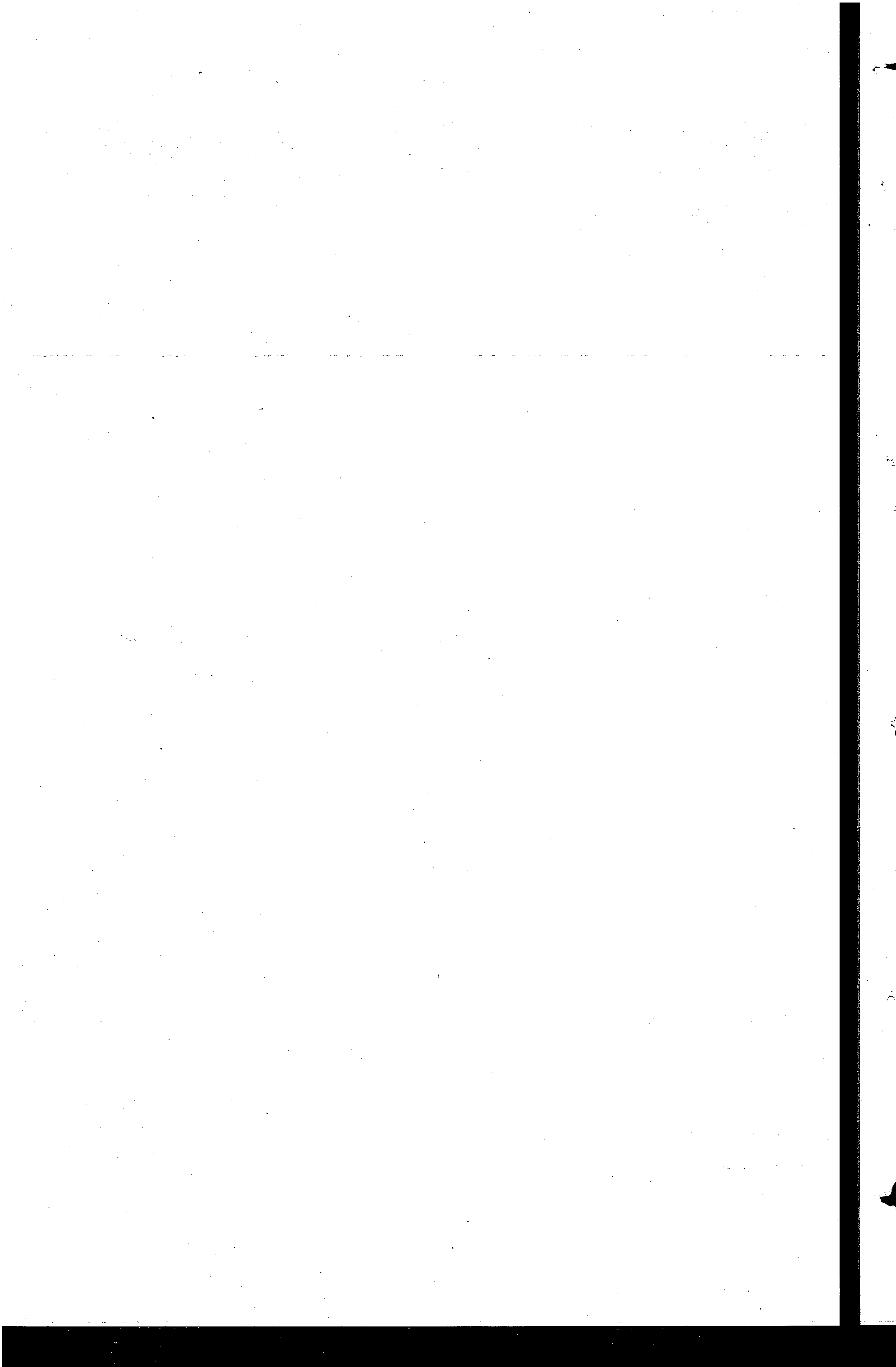
I is a small steam chest fastened to the outer end of the knee B, and provided with a stuffing-box, *c*, at its top, and a nut, *d*, at its bottom, the nut serving as a valve-seat, as well as for a fastening to secure the steam chest to the knee.

Within the steam chest I there is placed a drop or slide valve, J, fitted on a rod or stem, K, the latter having a rack, L, on its upper end, in which the toothed wheel F gears. The rack L and valve-stem K slide parallel with the bar E, the rack working in the guide C and the stem in the stuffing-box *c*.

M is a tube which extends from the top of the boiler A to the steam chest I, and is provided with a cock, *e*, and N is a tube which forms a communication between the lower part of the steam chest I and a horizontal cylinder, O, below the platform or foot-board P. Q is a tube which forms a communication between the inner part of the cylinder O and boiler A. In the lower part of the cylinder O, near its inner end, there is a cock, R.

S is a chain which is attached to the lower end of the sliding bar E and extends underneath a pulley, *f*, in the platform P, and is secured to one end of a rod, T, the opposite end of said rod being connected to a lever, U, the fulcrum *g* of which is in a fixture, *h*, underneath the tender of the locomotive.

V is an escape-valve which is connected to a lever or arm, *i*, and is applied to the under side of the cylinder O. The arm *i* is connected with a spiral spring, W, having a screw-rod, *j*, attached to it, on which an adjusting nut, *k*, is placed to regulate the tension of the spring W. This valve V is arranged similar

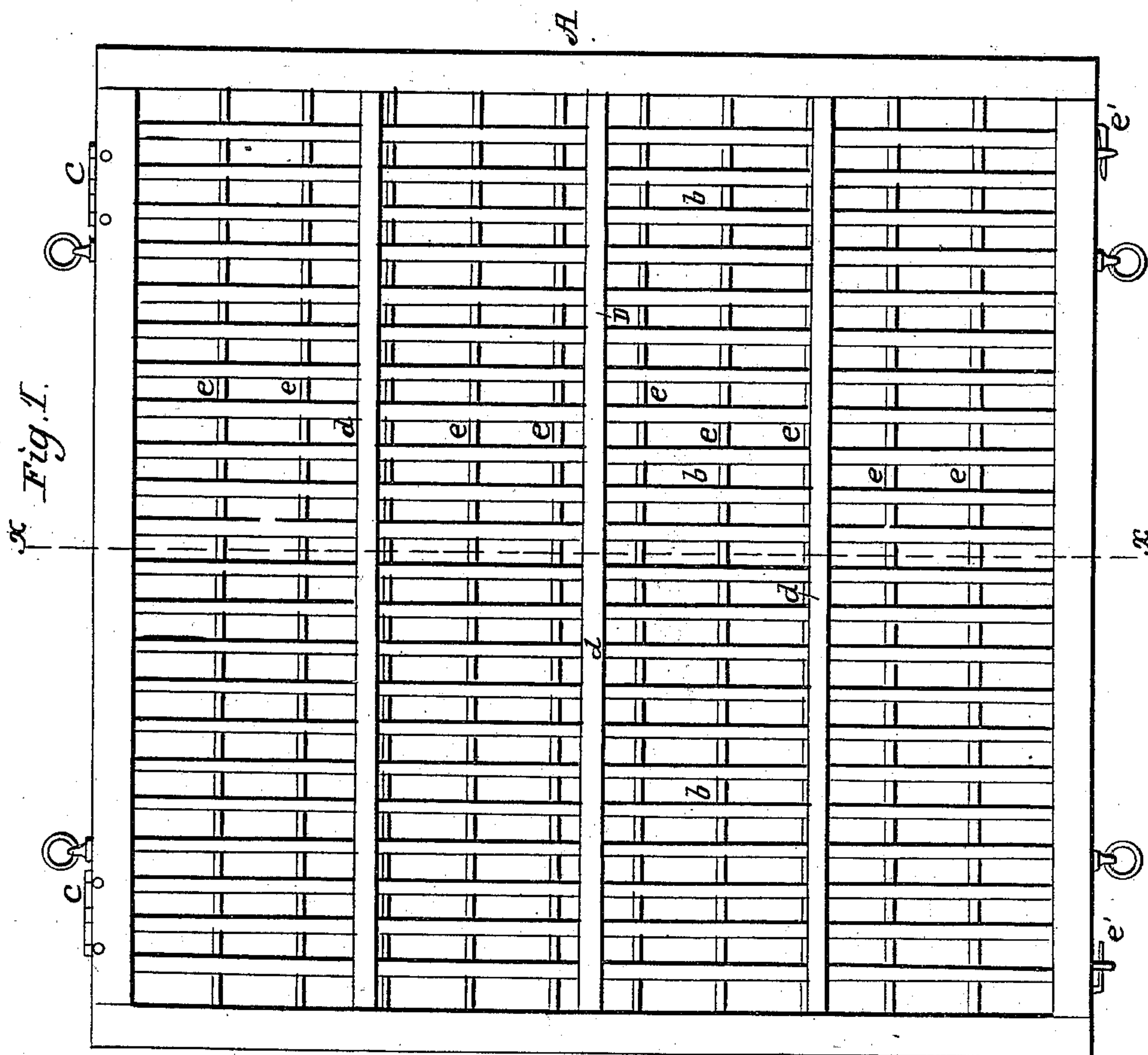
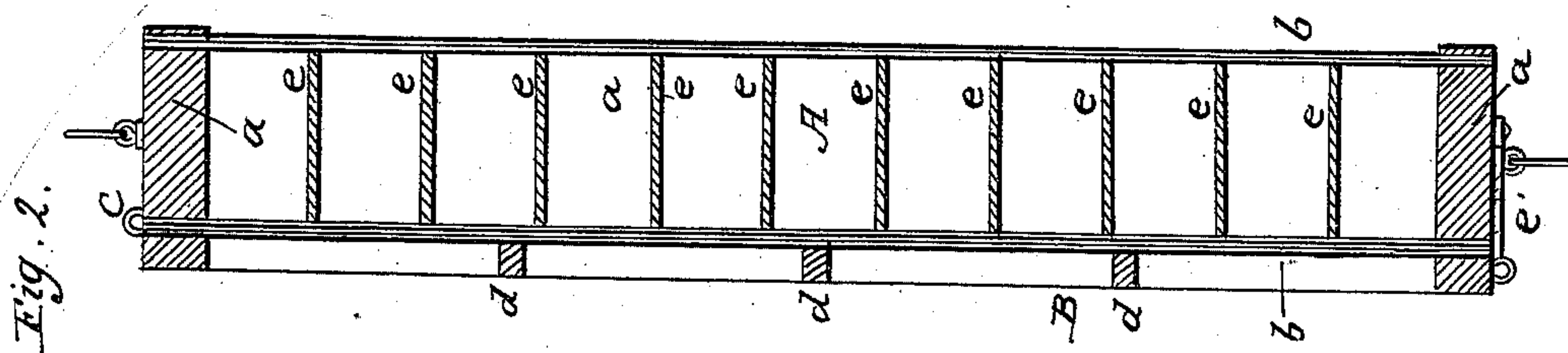


I. LYNDE.

Fruit Drier.

No. 42,386.

Patented April 19, 1864.



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