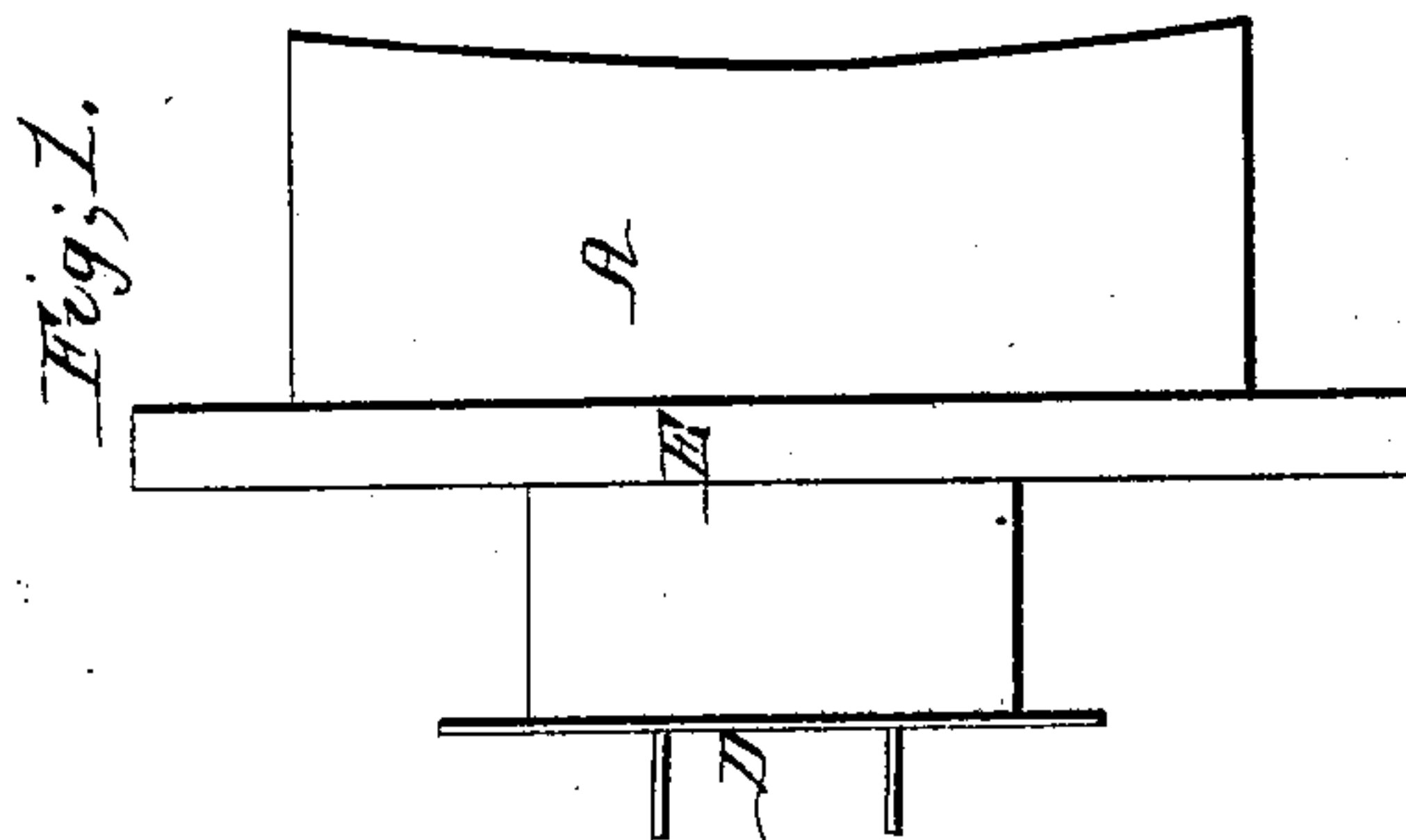
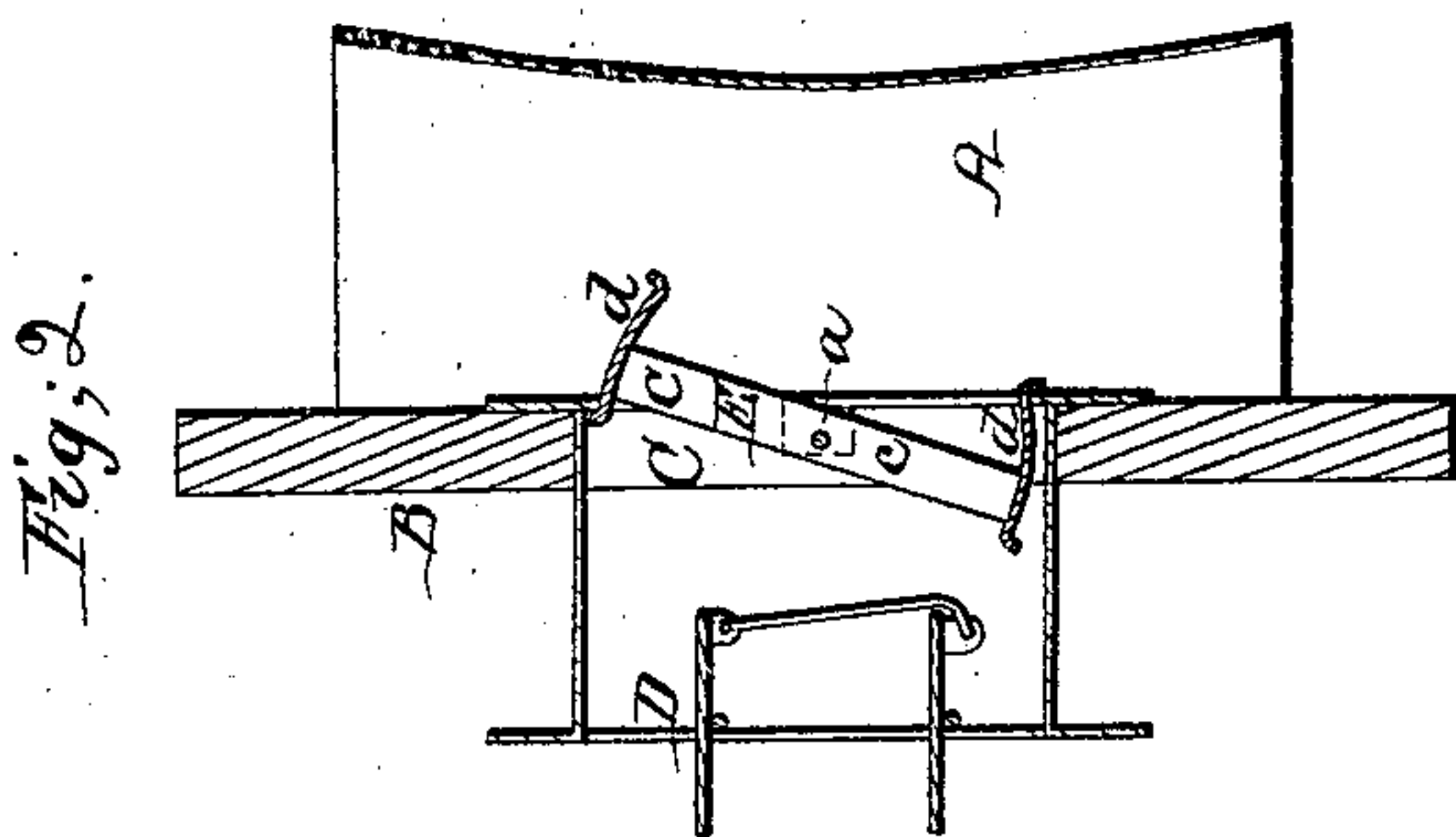
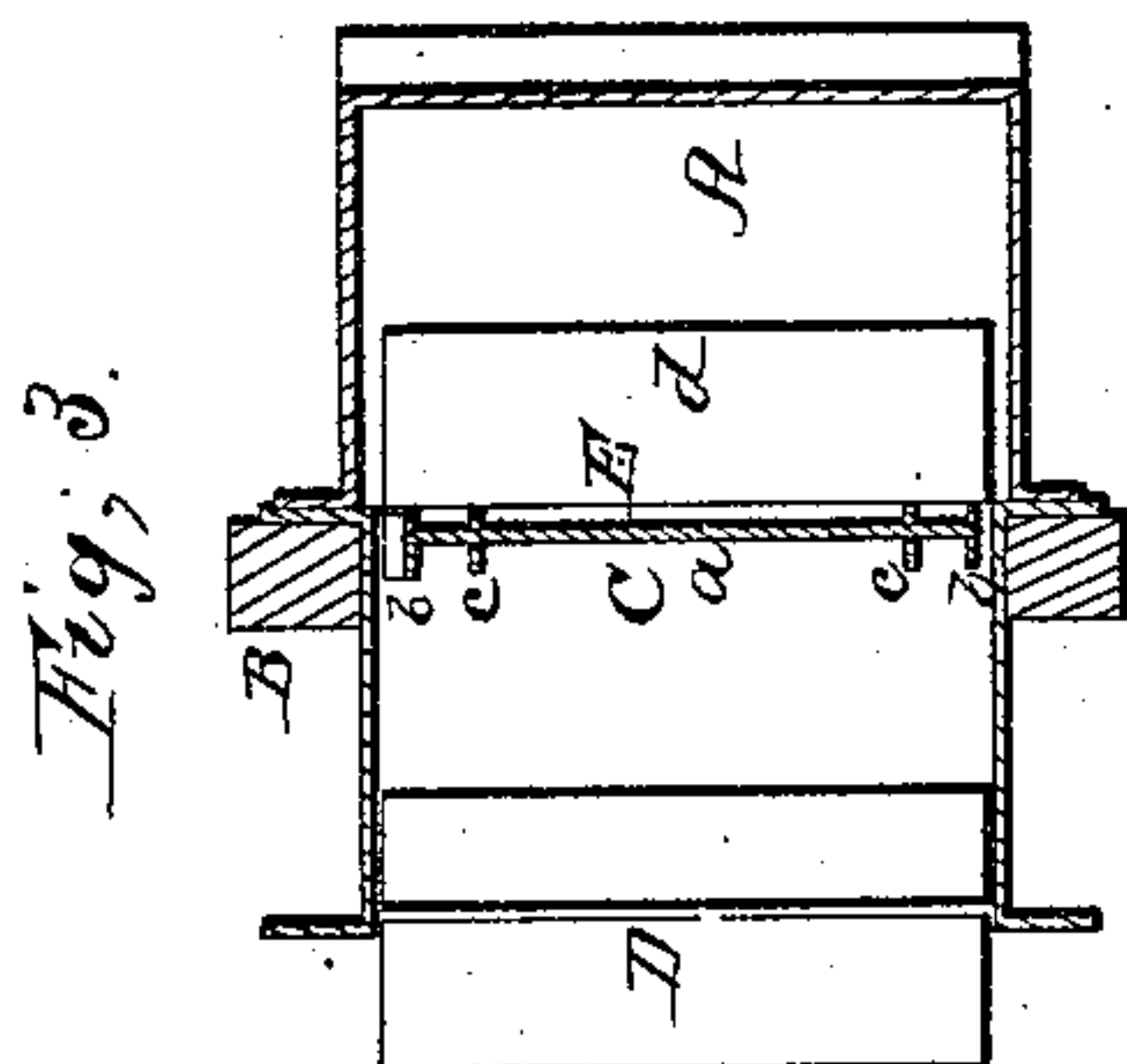


*G. Hardy,  
Car Ventilator,*

*N<sup>o</sup> 55,094*

*Patented May 29 1866.*



*Witnesses;*

*Samuel A. Piper.  
George Andrews*

*Inventor;  
George Hardy*

*by his attorney  
R. H. Eddy*

# UNITED STATES PATENT OFFICE.

GEORGE HARDY, OF LAWRENCE, MASSACHUSETTS.

## IMPROVEMENT IN CAR-VENTILATORS.

Specification forming part of Letters Patent No. 55,094, dated May 29, 1866.

*To all whom it may concern:*

Be it known that I, GEORGE HARDY, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and useful or Improved Ventilator for Railway-Carriages; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a longitudinal and horizontal section, and Fig. 3 a vertical and transverse section, of it.

The ventilator in question is self-acting, or, in other words, is set by the wind so as to operate in whatever direction the car or carriage may be in motion.

In the drawings, A represents a guard or case as applied to the side of a carriage, the part to which it is affixed being shown at B. This guard is open at each end.

A passage, C, leads through the side or part B, and into the interior of the carriage, and may be provided with a blind-register, D. At the middle of the outer extremity of the passage C is a venter, E, composed not only of a vertical shaft, *a*, (which is supported at its ends in bearings *b b*,) but of two vanes, *d d*, disposed vertically and at equal distances from the shaft, and connected thereto by means of arms *c c c c*. These vanes are so arranged that while one projects into the guard and beyond the passage C, the other may be within such passage.

Each vane and its two arms should correspond in weight and size with the other vane

and its two arms, in order that when either mouth of the guard may be in the act of being moved against the wind, so as to cause a current of air to pass through the guard, such current, by its action on one of the vanes, shall force it out into the guard, and at the same time cause the other vane to be pressed back into the passage C. The flowage of air by the outward vane will induce an outward current of air in the passage C, such as will tend to ventilate the car, provided the register is open.

This blind-register consists of a series of two or any other suitable number of turning gates or slats so connected that on one of them being turned in its bearings it will turn the rest correspondingly. In the place of this kind of register, which is well known, any other of a suitable construction may be employed to regulate the extent of the opening for the flowage of air out of the car and into the guard. The said guard serves to protect the eduction-passage C from rain or snow, as well as to induce a current of air by the venter E.

I claim—

The vibratory venter E, constructed as described, and its combination and arrangement with a passage, C, leading into a car or structure to be ventilated, and with the guard A, made and arranged with respect to the said venter and passage as hereinbefore explained.

GEO. HARDY.

Witnesses:

R. H. EDDY,

G. H. WASHBURN.