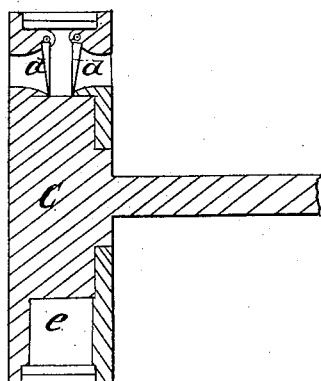
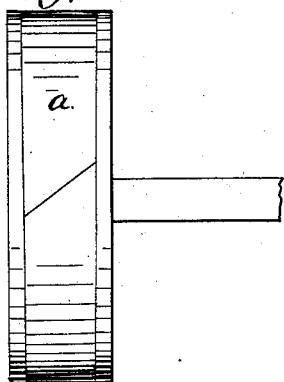


*E. L. Horton,*  
*Steam-Engine Piston.*  
*N<sup>o</sup> 905.      Patented Sep. 5, 1838.*

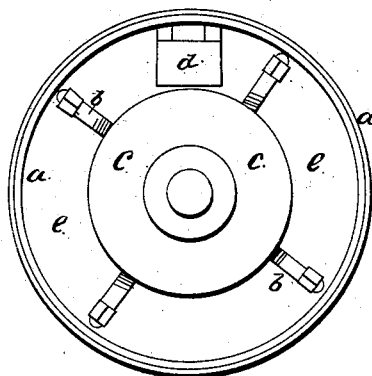
*Fig. 2.*



*Fig. 1.*



*Fig. 3.*



# UNITED STATES PATENT OFFICE.

ELLIS L. HORTON, OF HARTFORD, CONNECTICUT.

## STEAM-PISTON.

Specification of Letters Patent No. 905, dated September 5, 1838.

*To all whom it may concern:*

Be it known that I, ELLIS L. HORTON, of the city of Hartford, in the county of Hartford and State of Connecticut, have invented  
5 a new and Improved Mode of Constructing the Pistons of Steam-Engines; and I do hereby declare that the following is a full and exact description thereof.

My improved piston is of the kind which  
10 is intended, in general, to operate by means of an expanding metallic packing; but my improvement is not necessarily confined to those pistons with a metallic packing, but may be employed in all cases where it is desired to cause the elastic force of the steam  
15 to operate within the body of the piston and force the packing against the cylinder.

My improvement consists in the employment of two valves, one on the upper and  
20 one on the lower plate of the piston when used in a vertical cylinder; each of these valves opening inward, so as to admit steam to pass in freely on either side where its pressure may be made, and to prevent its  
25 escape in the opposite direction.

Figure 1 in the accompanying drawing, is a side view of said piston for a horizontal engine. Fig. 2 a vertical section through its middle; and Fig. 3 a view of the interior,  
30 the front plate being removed.

*a, a,* are hoops, or flat rings of steel, or other metal, one within another, divided so

as to allow them to adapt themselves by their elasticity to the interior of the cylinder.

*b, b,* Fig. 3, are set screws, which are intended to keep the segments of the interior hoop, when divided into segments, in place; they are tapped into the hub, or center of the piston, *c, c.*

In Figs. 2 and 3, *d, d,* are the valves, opening inward; one of them only being shown in Fig. 3, the other being attached to the front plate; *e, e,* is the chamber within the cylinder, into which the steam is admitted, and within which it acts upon the interior of the packing, forcing it against the cylinder, and counteracting its tendency to pass between the two.

What I claim as constituting my invention, is—

The employment of two valves, one in the upper, or, front plate, and the other in the lower or back plate of the piston, to admit steam on either side, in the manner, and for the purpose herein set forth, without confining myself to any particular form of the valve, or to the position of the cylinder, whether vertical or horizontal.

ELLIS L. HORTON.

Witnesses:

LINTON THORN,  
C. H. WILTBERGER,